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No. 1

THE SOCIAL ORGANIZATION OF THE NAMA HOTTENTOTS OF SOUTHWEST AFRICA¹

BY A. WINIFRED HOERNLÉ

THE people with whom this paper deals live in the territory known to-day as the Protectorate of Southwest Africa. They form one branch of the people known generally as the Hottentots, but from the very earliest days of the Dutch settlement at the Cape this branch of the Hottentot peoples has been called the Namaqua, and Nama is the name by which they call themselves to-day. The meaning of the word is unknown, but it is, according to tradition, the name of a remote ancestor of all the tribes calling themselves by the name. The old form, Namaqua, is probably derived from the dual form, *Namakha*, *Namab* being the masculine singular, *Namas* the feminine singular, and *Naman* the common plural.

To the early Dutch settlers two groups of the Nama were known, viz., the Little Namaqua, inhabiting what is known to-day as Little Namaqualand, and the Great Namaqua who inhabited what is to-day known as Great Namaqualand. Both of these groups of people at times visited the settlement at Table Bay,

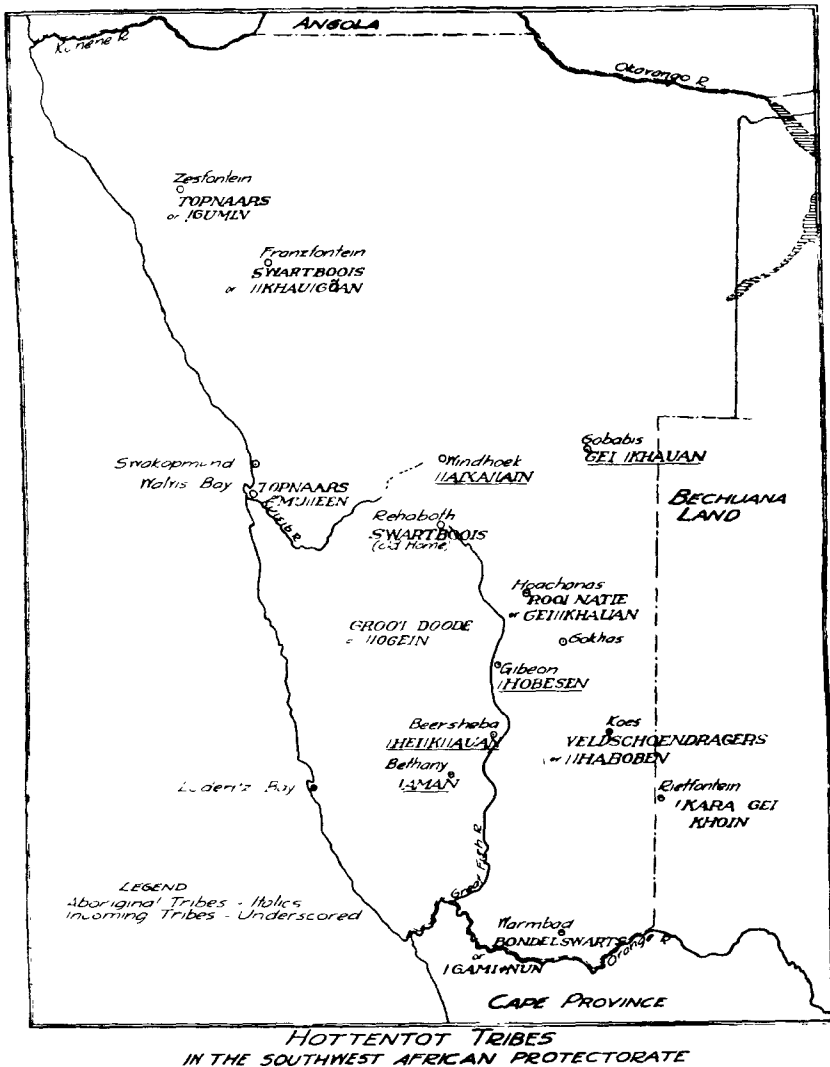
¹ In transcribing the Hottentot words, I have used the system of Krönlein's *Wortschatz der Khoi Khoi*, Berlin, 1889, as this is the system used by the Nama themselves nowadays in their writing. It is not strictly accurate always from a phonetic point of view, especially for the Swartbooi pronunciation, but it is the conventional script of the Nama, and in this paper which is not concerned with phonetics it seemed best to follow it.

There are three tones in Nama each of which may give an entirely different meaning to an otherwise identical word. ` indicates a low tone, ' a medium tone, ^ a high tone. In order not to complicate the manuscript, I have indicated these tones only where it is essential in order to avoid confusion in the reading.

~ is the sign of nasalising; - indicates a long vowel; X indicates a harsh guttural *ch* something like the Dutch *ch*.

/ indicates the dental click, ≠ the palatal, / the cerebral, // the lateral.

and their area of migration seems to have been a very wide one in the early days. But the Great Namaqua were always the most northerly group of the Hottentot peoples, and early in historical times they settled definitely in the country to the north of the Orange river.



The whole area of the Southwest African Protectorate is approximately 322,450 square miles, and Great Namaqualand

occupies approximately two fifths of this area. In the past the northern limit of the Nama was indefinite until the pressure from the north by the Herero became serious, and certainly since the early part of the last century the Nama have been chiefly concentrated in the area of Great Namaqualand. This country is a high level plateau, or tableland, with an average altitude of 3,500 feet above sea level. Along the coast there is a strip of absolute sandy waste, of varying width but averaging about 35 miles across. The country rises rapidly from the coast inland, and the central tableland is cut off from the desert strip, or Namib, by a plateau range of sandstone formation running from north to south with an average height of 4,500 ft. The northern boundary is formed by the Awas mountains, a rugged mass of primary formation rising to a height of 7,200 feet above sea level and forming the watershed of the country. The rainfall over the whole area is extremely small, averaging from 4 inches in the south to 12 inches in the north. The country is, then, on the whole a barren plain with sparse vegetation and little permanent water. Yet after a season of sufficient rains it becomes a waving sea of grass, admirably suited both to cattle and sheep.

Such is the home of the nomadic pastoral Nama who originally owned great herds of large-boned, long-horned cattle and flocks of fat-tailed hairy sheep. Before the coming of the missionaries these people wandered about from fountain to fountain, seeking pasture for their stock. Large permanent fountains, or pools in river beds were claimed as their property by the different groups, rather than areas enclosed by definite territorial boundaries.

There are at present in the Protectorate, besides remnants of the various groups of the Great Namaqua with which this paper is mainly concerned, remnants of other groups who came in from the south of the river in the early part of the nineteenth century, when the general movement of the Hottentot peoples was away from the white settlements. These incoming groups spoke practically the same language as the Nama groups; indeed, the language throughout the area is very similar, so that one can hardly even speak of dialects, though undoubtedly there is a slight difference of vocabulary in the widely separated groups and, in

some cases, a slightly different intonation. These incoming groups were remnants of different tribes, mostly of Little Namaqua stock, who had, however, before their migration received a considerable infiltration of white blood. A great many of the men also spoke Dutch and the general culture had in many ways been influenced by contact with the Dutch and other colonists. These groups are called collectively Orlams by the indigenous people, a name the origin of which is doubtful. They penetrated into the territory of their kinsmen, at first peacefully by paying a small tribute for the use of the water of certain fountains, but later there was a great deal of fighting between the different sections, and the Orlams in the second half of the 19th century certainly had the upper hand in every way owing chiefly to their prior possession of firearms. The chief of these incoming groups are the Africaners (*/Aixa /ain*), the Witbooi (*/Hobesen*), the Bethany Hottentots (*!Aman*), the Berseba Hottentots (*/Hei /Khauan*), the Amraal Hottentots (*Gei /Khauan*). It will be seen that the Dutch names for these groups are taken partly from the names of their chief settlements, e.g., Bethany, Berseba, partly from their chief leaders, Africaner, Amraal, Witbooi. The Hottentot names are taken mostly from the name of the supposed first ancestor of the people, e.g., */Khauan* from the personal name, */Khauab*, which is not now thought of as having any special meaning. There were two branches of these people, the older branch or the big (*gei*) branch, and the light-coloured branch (*/hei*). On the other hand, the Witboois have a Hottentot nickname, */Hobesen*, from */hobe* or */howe*, lazy, which they do not like at all. For most of the names of these groups, or "tribes," as I shall call them later, it is not now possible to find any clear meaning, nor are the names thought of as having any meaning by the people themselves; they are proper names and no more.

The indigenous people were in historical times divided into seven main groups, with one or two subsidiary ones which are known to have been late offshoots from these main groups. According to the traditions of these people they are all descendants of one line of ancestors. One form of this legend was told to me by Abraham Kafir, a headman of the Bondelswarts, in 1913. There

were once, so he said, five brothers, each one of whom was the founder of a tribe of the Nama. The eldest was the ancestor of the *Gei //Khaun*, or Rooi Natie, the tribe acknowledged by all the others to be the senior tribe among them. The other brothers are said to have founded the *!Gami ≠nun* or Bondelswarts, the *//Haboben* or Veldschoendragers, the *!Kbara Gei Khoïn* or the Simon Kopper Hottentots, and the */'Khau 'goan* or the Swartboois, who are said to be the descendants of the youngest brother. According to another legend, the *//Haboben* are a branch of the *!Gami ≠nun*, and this agrees with the information given to us by the traveller Sir James Alexander, who reports that when he visited the *!Gami ≠nun* in 1836 the */'Haboben* were still part of the people owing obedience to the *!Gami ≠nun* chief.² The other two major groups of these Nama people, the *//O gein* or Groot Doode, and the *≠.!unin* or Topnaars or *!Gumin*, are not linked up with the others in the legend of the five brothers, but they themselves claim to be offshoots from the Rooi Natie, and the Rooi Natie on their side support this claim.

The names of these tribes are in many instances exactly translated by the Dutch names by which they are now chiefly known. Thus the *//O Gein* are the great dead, or Groot Doode as the Dutch has it; the *!Gami ≠Nun* are the people of the black bundle or Swart Bondel. Their own legend concerning their name is that they once formed one group with the Rooi Natie; that on the death of an old chief his sons quarreled among themselves, the elder going off with his supporters, while the younger brother stayed behind with his little group of people huddled together so that they looked like a little black bundle. The *//Haboben* are called after a kind of sandal worn by the people (Dutch, *Veldschoen*, Nama, *//Habob* or */'Hawob*). The Rooi Natie and the Swartboois are closely related. As late as 1855 the chief of the Rooi Natie expected the Swartboois to obey his orders concerning migrations, etc., but they did not always do so.³ The Nama names by which these two groups are called still record this close

² Sir James Alexander, *An Expedition into the Interior of Africa*, 2 vols., London, 1838. Pp. 187, 197.

³ *Berichte der Rheinischen Mission*, 1855, p. 18.

connection. They mean the big group of //Kha^uan, and the young group, or, literally, the children, of the //Kha^uan. The derivation of the name //Kha^uan I do not know. The Topnaars, or the ≠Aunin, are the people of the point, referring to their inhabiting the sea coast, the extreme point of occupation of the Nama. An alternative name is the !Gumin of which I do not know the meaning.

All these groups which I have enumerated I propose to speak of as "tribes," for, in spite of their claim to a common ancestry, these groups have been for a long time independent of one another. Each group has its acknowledged chief and its acknowledged fountains, though before the coming of the white man and of the Orlams the boundaries between the different groups were not marked in any clear manner. In an old document, translated in the Rhenish Missionary Record for 1854,⁴ the chief of the Rooi Natie complains that the Berseba Hottentots have taken possession of one of his fountains. He gives them permission to stay, but states specifically that this does not mean that he gives over the fountain to them; "the water is my water," he says again and again. We shall also see a little later that the different water holes, or fountains, in the country were always thought of as belonging to certain specific groups. This did not mean that other people could not use this water, but that one group had a prior claim to it established by habit, and had the right to expect that any other group intending to camp there for long would ask permission to do so.

A certain light is thrown on the antiquity of these different divisions of the Nama people by the record of the travels of the Frenchman, Le Vaillant. Travelling north of the Orange river in 1783, he came to an encampment of Hottentots who called themselves Gami nu Khois.⁵ The place to which he went, and the name, both point to the fact that he found himself among the !Gami ≠Nun, or !Gami ≠Nu Khoiⁿ (Khoiⁿ meaning "people"), so that at least as early as 1783 the !Gami ≠Nun formed a distinct group.

⁴ p. 155.

⁵ F. Le Vaillant, *Second Voyage dans l'Interieur de l'Afrique*, Vol. II, p. 261. The author spells the name 'Caminouquois.'

At the present day some of these tribes are extinct; that is to say, the tribal unity is totally destroyed, though one may still come across individuals claiming to belong to one or other of these tribes. But even where there is still a small remnant of people holding together under the leadership of a man whom they regard as a headman, or chief, the whole culture and power of the Nama is hopelessly destroyed. The history of all these tribes for the last 150 years has been one of incessant strife, first among themselves, owing to the dislocation caused by the incoming of the tribes from the south; next with the Hereros, a Bantu tribe advancing on them from the north; and last with the Germans who finally broke down the tribal cohesion completely, except in the case of the Berseba Hottentots, who remained loyal to their contract with the Germans and never fought against them.

All the tribes, further, have a great deal of mixed blood, brought into them first by their own relatives from the south, and then by mixture with the Germans. The generation which is growing up to-day in the Protectorate is practically all of mixed blood.

With regard to the numbers of these people, it is extremely hard to give any trustworthy figures. Palgrave, who was sent up to Namaqualand as a Special Commissioner by the Cape Government in 1876, to report on whether it was advisable for that government to assume responsibility for the territory, gives the figures of the various tribes as follows.⁶ The figures are approximate: *Gei* // *Khauan* 2,500, *!Aunin* 750, // *O Gein* 800, // *Khau* / *Goan* 1000, // *Haboben* 1800, *!Khara Gei Khoi* 800, *!Gami* *!Nun* 2000, *Africaners* 800, *Witboois* 2500, *Bethany Hottentots* 2000, *Berseba Hottentots* 700, *Gobabis Hottentots* 600. Altogether, with a few groups not known to-day, the number in 1876 was 16,850. In 1921, the census returns estimated a population of 20,000 people called Hottentots,⁷ but there was no attempt to discriminate the pure blooded from those of mixed

⁶ Report of W. Coates Palgrave, Esq., of his Mission to Damaraland and Great Namaqualand in 1876. Cape Town: Printed by Saul Solomon & Co., 1877. [G. 50-77]. p. 94.

⁷ Cf. Administrator's Report for S. W. Africa, 1922, p. 10 [U. G. 21-1923].

blood, and there is no accurate estimate of the numbers belonging to the different tribes. The Swartboois, whom I visited in 1923, numbered a little over 200. The Rooi Natie cannot count 100 adherents, while the Berseba Hottentots now claim over 3000 adherents. Most of the Hottentots are, as a matter of fact, scattered about over the length and breadth of the country among the farmers and have no longer any tribal allegiance, for it was the deliberate policy of the German government to break up the tribes.

The present administration has set aside certain reserves for the remnants of the Hottentots. Three of these reserves are already established, viz., a large one for the Berseba Hottentots, a smaller one for the Bondelswarts, and a small one for the Swartboois in Franzfontein; and besides these there are some farms which have been given to small remnants of other tribes. In addition, a number of Hottentots of various tribes are to-day to be found in the territory of the Rehoboth Bastards, while one tribe, the *!Khara Gei Khoi*, slipped across the border into British territory during the German-Hottentot war. The few survivors of this tribe are wandering to-day in the southern Kalahari. I have never come in contact with any members of this tribe.

It is obvious that the culture of a people so much harassed has suffered very greatly. It is, in fact, in the last stages of decay. After the rebellions against the Germans, the tribes were not allowed to keep "great stock," i.e., cattle, and only a limited number of sheep and goats, so that the old pastoral life fell more and more into decay. The people all claim to be Christians, and the influence of the Dutch, with whom they have long been in contact, can be traced in all of their institutions, even in their kinship system.

The social organization which I am about to describe, therefore, relates almost entirely to the past. The details of it have been gathered with great difficulty from the old headmen of the tribes, and much of it is little known to most of the younger generation.

If we study what I have called a tribe more closely, we shall find that in all cases it is composed of a number of patrilineal sibs,

that is, of groups of people claiming to be related in the male line; and that one of these sibs claims seniority. The chieftainship is hereditary in this senior sib and is inherited in the male line. In some cases I have been given traditions of the formation of the tribe, the various sibs claiming relationship with one another in the far distant past, but in no case has it been possible to trace this relationship genealogically. Each sib names itself eponymously from its first known ancestor, or from the ancestor under whom it first claimed independence. The Nama themselves recognize these divisions into tribes and sibs, the tribe being called *!Haus*, and the sibs *!Hau !Nati*, that is, things within the tribe (*!haus*, tribe; *!na*, preposition in, turned into a noun by the suffix *s* for the singular or *ti* for the plural).

The sibs of the Swartbooi tribe are as follows: */Gari Gein*; */Gari !Nagaman*; */Gari ≠Karin*; *//Neigaman*; *Goamun*; *!Gurusen*; *//Khou Tanasen*; *!Ga ei Tanasen*; *!Neise ein*; *!Oa Gaon*. Two of these sibs are formed by people who were incorporated in the Swartbooi tribe after the break-up of the Groot Doode tribe who at one time lived near the Swartboois. (The old headquarters of the Swartbooi tribe were at Rehoboth. The tribe fled from there during the Africaner war with the Herero, and fought its way northwards to Franzfontein during the eighties of last century.)

Of the other sibs it will be noticed that three among them have the same name, */Gari*. The name */Garib* is still found among the Nama as a name of a person. The sibs are the big (*Gein*) */Garin*, the next (*!Nagaman*) */Garin*, and the little (*≠Karin*) */Garin*. Now, it is the Hottentot custom for all sons of a woman to have her name, and they are distinguished from one another by just the epithets used here, the eldest being called the big one (*geib*), the second the next one (*!nagamab*), the third the dark one (*≠nub*) or the light one (*/heib*) or the tall one (*gaxub*), and so on, while the youngest will be called the little one (*≠karib*) or the young one (*≠ami*).

The legend of the Swartboois themselves is that they separated from the *Gei //Khauan*, the parent tribe, under the leadership of the */Garin* family, and that the three leaders became the ancestors of the three chief sibs of the tribe. The *//Khou Tanasen*,

the //Neigaman, and the !Gurusin are said to be sibs descended from the sisters of these brothers whose husbands remained with the wives' people, instead of taking their wives to their own tribes, or sibs, as is usually done. It is still a Nama custom that a woman should remain with her own people if there is good reason for it, and a woman often marries a man on that understanding. At the same time marriages between members of different tribes were very frequent in the past, and the women of a family might be scattered far and wide over the country after marriage.

When the tribe was first formed, the chieftainship was in the /Gari Gein sib, as one would expect, but nowadays the chieftainship has passed to the second branch, the /Gari !Nagaman. According to the headmen of the tribe, who corroborate what the present chief, David Swartbooi, told me, the chieftainship passed from the one sib to the other when the elder branch became almost extinct. There are to-day only two or three people represented in this sib.

There are in all ten chiefs concerning whom I obtained information. The earliest to be remembered is /Khanabib, who is followed in order by Tsamkau, Tsaugab, Tsauxab, ≠Aubib, !Huisib, William Swartbooi (Sir James Alexander's friend), then !Huisib's son !Habib Abraham Swartbooi, then !Habib's son Cornelius Swartbooi /Hoa/arab, then William Swartbooi's youngest son !Habib ≠ami, and now the latter's son !Hanamub David Swartbooi. David was from 1897 until 1923 a prisoner in Windhoek, owing to supposed intrigues against the Germans, but has now been allowed to go back to his tribe in Franzfontein. He is an old man now, so that his son, Petrus Swartbooi, !Hara Geib, has actually been made headman of the tribe by the present Administration.

It is interesting to note that the /Gari !Nagaman are beginning to drop this name for the sib and to call themselves Tsauxan, after the chief of that name whom they claim as the first chief to come from their sib. Further, there is a sib being formed from these Tsauxan the members of which call themselves !Oa Gaon, which means the younger branch of the chief's (gaob) sib. They have not taken any other name for themselves as yet, and are

not likely to do so as the custom of using Dutch surnames is increasing and the old Nama names are falling into disuse.

There is no name for the families which together go to form a sib. They are also called *!Hau !Nati*. These families to-day have Dutch, or at any rate European, surnames, and though they claim to be blood kinsmen and in former days would not have intermarried, it is not now possible to trace any genealogical connection between these families. All the members of the chief's sib call themselves Swartboois, a name which seems to have been applied in the first instance to William Swartbooi whose Nama name, *!Huisib*, however, means the root of a special kind of acacia. In the */Gari ≠Karin* sib we get the Hendricks as the chief family; in the *!Gurusin* sib there are at least four families, the Swartboois, Gertzes, Richters, Van der Byls. The *//Neigman* sib has three families represented to-day, the Davids, the Swartboois, the Linders. The *!Oa Gaon* are the Petersens, whilst the Goamun's are represented to-day by the Orlam family, the *//Khou Tanasen* by the Kido and the Branda families, the */Gari Gein* by only one family, the *Matibis*, and the *!Neisi ein* by the Beukes family.

The analysis of the sib structure of this tribe shows, I think, the whole mechanism by which sibs and tribes are formed among the Nama. A large and flourishing family will very often have its own favorite pasturing grounds and be so large as to exclude members of other families or sibs. In course of time they become sufficient unto themselves, and the headman begins to play the part of chief. They arrange their migrations to suit themselves independently of the other members of the tribe, and in course of time are acknowledged to be independent. Then, as the families increase, descendants of the different brothers group themselves together more closely and form sibs and sub-sibs. In this way a new tribe develops from a sib, or a part of a sib, of the parent tribe.

My information is most complete and definite in regard to the Swartboois and the Topnaars, but, so far as it goes, the evidence from the other tribes is in complete agreement with the course of development outlined above. The Topnaar tribe is to-day divided into two sections. One of these lives far away to

the north in the Kaokoveld whither it retired after the defeat of the Hottentots by the Herero in the sixties of last century. The other section lives in the dunes around Walvis Bay and in the bed of the Kuisib river at various places. The people in the north are reduced to a mere handful and those in the south are probably the most miserable of all the remnants of the Nama, though in Sir James Alexander's time they were described as being fine, handsome people.⁸ My information about these people was obtained from the daughter of one of the last chiefs, an intelligent old woman, Khaxas, and from some of the headmen of the last recognized chief of the tribe, Piet //Eibib, who had himself died before I visited the tribe in 1912. According to the information of these old people, the tribe originally lived far to the north in the region to which one branch has again retired. When they first came to Walvis Bay, another Nama people, the /*Namixan*, were in control, one of the sibs of this people being called the ≠*Ai* //*Kumsin*. These people were completely defeated and the remnant incorporated in the sibs of the newcomers who called themselves *Mu*//*een*, so that today no /*Namixan* are to be found. The sibs of the *Mu*//*een* are the //*Hornibin Gein*; //*Hornibin* /*Goan*; the !*Noraban*; the /*Ubuxan*; and the /*Heibin*. There are today very few of these pure *Mu*//*een* people left. The Nama population of Walvis Bay consists now of stragglers from all the tribes and of half-breeds of many different nations.

The sibs of the *Gei*//*Khauan* I have been able to learn from the few old men who still represent this tribe. One of these men, !*Goi ep*, claims to be the hereditary chief of the people and is so acknowledged by the handful who are left of this once large tribe. Most of the sibs named to me have now no representatives at all. The rest are represented by a few individuals. It is impossible to say whether the list is complete, because the Nama very easily forget a sib or family which has no representatives living.

The sibs are !*Khabiron*; !*Nurisin* (extinct); //*Nani* ≠ *nun*; *Nani* /*Aban*; /*Hana* /*Gaon*; , *Naobxa* /*Garien*; *Kabun*; !*Hoara*-

⁸ *L. c.*, vol. I, p. 72.

*sin; Gamadamin; //Gubu ≠Karin; !Khaian; !Gaba ≠Karin; //Khau ≠Nun; //Khau Tanasin; ≠Khari ≠Namen.*⁹ The chieftainship was held by the *//Nani /aban*, the red *//Nanin*. Whether the term Rooi Natie, Red Nation, by which this tribe has always been called in Dutch, is derived from the name of this sib I do not know, but it may be. From the names of the sibs it is easy to see that there must have been many more sibs at one time. Thus, one sib is called the small *//Gubun* which makes it likely that there was at least one other *//Gubun sib* from which it had to be distinguished. Another sib is the small *!Gaban*, and so on. It will be noticed that there are two sibs called *//Khauan*, the *//Khau Tanasin* and the *//Khau ≠Nun*, while the whole tribe is called *//Khauan Gein* or *Gei //Khauan*. One of these sibs, the *//Khau Tanasin*, is the same as we found among the Swartboois, while the Swartbooi tribal name is taken from this same sib name, the *//Khauan /Goan*. The tradition of these two tribes, therefore, that they are originally one tribe, is corroborated by the evidence from the sib structure.⁹

The *//Haboben* tribe is also broken up and scattered now. I have never lived among this tribe and have had to gather my information concerning it from chance individuals living in other tribes. In 1923 I visited a very old man of this tribe in the Windhoek gaol. He had been the chief advisor of the chief who had also been in prison but who had died. Unfortunately, the old man's memory was failing and I cannot be sure that the information from him is complete. The sibs, so far as I have them, are as follows: */Haoen; Dou Gein; !Amen; Garsin; Ourin*. The *Ourin* was the sib in which the chieftainship was hereditary.

The remnants of the *!Khara Gei Khoïn* are in the Kalahari desert, and none of the men I have met in the Protectorate have been able to give me any information concerning their old tribal structure. At the present day all these people have Dutch names.

The *!Gami ≠Nun*, though one of the old aboriginal tribes, have lived for so long on one of the highways into the Protectorate

⁹ Seven of these sibs are mentioned by the first missionary to the Rooi Natie, Vollmer; cf. Rheinischer Missionsbericht, 1866, p. 277.

that they have been very much exposed to incoming influences. To-day they have all Dutch surnames. I have, however, been able to collect some of the old Nama names which were in use before the European surnames came into common use. The chief's sib has now the surname Christian, and they call themselves the *!Gami* \neq *Nun*. The Matros family have the Nama name *Tububin*. The Aprils are the *!Nanin*. The Hackskind family takes its Dutch name from a translation of the old Nama name *!Noarin* (*!Noas* = the heel). Another sib is called the *!Nurubin*; a third the */Nabasin*, another the */Arimun*, who to-day also have the surname Christian. In giving me these names the old headman, Christian, gave me the fountains in the Bondelswart territory which were known as the headquarters of these different sibs.

The Orlam tribes, that is, the tribes who came into the territory from the south, have all surnames taken from Europeans, such as the Izaacs, the Goliaths, the Christians, the Hendricks, and I have found it impossible to get their old Nama sib names from them. In the *Zeitschrift für Vergleichende Rechtswissenschaft*, Band 15, 1901, however, there is an account of the sibs of the */Hobesin*, given by the then Bezirkshauptmann von Burgsdorff in answer to a questionnaire sent out by Dr. Kohler. According to him there were seven sibs among the */Hobesin*:

- 1) */Khowan* (families: Witboois, Dragoners, Hanses, Kaisers).
- 2) *!Amin* (Izaacs, Gertses, Zals, Banks, Vishers).
- 3) *Dausan* (Jods, Classens, Stewes, Sewis, Jahrs).
- 4) *!Noresen* (Jantzes).
- 5) */Kharan* (Piqueurs, Marius).
- 6) *!Hawe* \neq *Nun* (Romans, Jacobs, Links).
- 7) */Khorin* (Pitters, Fredericks, Jochems, Links).

This evidence from the Witboois is sufficient to show that the structure of these tribes from the south was essentially the same as that of the tribes of the Great Namaqua.

The families claiming to belong to a sib still tend to live together, though the old original camping order has long been given up. Information from many sources, however, enables one to reconstruct the old encampment, and this reconstruction agrees

with information given to us by the early travellers among the Hottentots.

In the old days a Nama encampment was in the form of a great circle. The whole was enclosed with a great fence of thorn in which there were two gateways, one to the north, the other to the south. Within this fence, round the circumference, were the huts of the *!Haus*, or tribe. There might on certain occasions be a whole tribe encamped in such a manner, and, in any case, there were usually some representatives of each of the sibs at the chief's headquarters, though there might be other encampments in other parts of the tribal territory. In the great open space in the centre the cattle were herded at night. Special kraals were made for the calves and the lambs, but neither now nor in the past did the Hottentots make kraals for the cattle or the sheep. These animals just lie in front of the owner's hut for the night.

The following is the order in which the sibs of the Swartboois camped. In the western portion of the circle stood the huts of the chief's sib, facing east. On his left, as one faces east, came in order the *!Oa Gaon*, the *//Naigaman*, the *!Gurusin*, the */Gari Karin*, the *!Neise ein*. On his right in order came the *Goamun*, the *//Khou Tanasen*, the */Gari Gein*, and the *!Ga ei Tanasen*, meeting the *!Neise ein* in the east of the circle. The Topnaars encamped in the order *//Hornibin Gein*, *//Hornibin /Goan*, *!Noraban*, */Ubuxan*, */Heibin*, starting from the *//Hornibin Gein* in the west and continuing round the circle to the left.

Through the whole course of Nama history the sib was the strongest social unit the Nama ever attained. Time and time again a strong sib would go off on its own, asserting its independence of the others, and sib loyalty was always stronger than tribal loyalty. It is no wonder, then, that the chief among the Hottentots was little more than *primus inter pares*. He was acknowledged to be the head of the senior sib and, if a person of fine character, was accorded a great deal of respect, but the heads of the other sibs acted as his council and he could not do much without their coöperation. The whole conduct of affairs, then, in a Nama tribe was, and is, the concern of the older men of the tribe.

The sib loyalty was very strong. Members of a sib all considered themselves to be blood relatives, and marriage in the sib was strictly forbidden. Nowadays, these rules are broken but the older men still shake their heads over the marriages of the younger generation.

Membership of a sib guaranteed to a person a very strong measure of protection, for he could always count on the support of his fellow sib members. We know from accounts left to us by travellers among the Nama in the early part of last century that at that time the vendetta was still in full force among them; that is, the chief was unable in the interests of the whole people to prevent two sibs from carrying out revenge one on the other, or to force them to accept compensation. Sir James Alexander gives an account¹⁰ of such a vendetta among the Bondelswarts when he was travelling among them in 1836, and in the Rhenish Mission Record for 1856 there is an account¹¹ of another vendetta at Bethany among the !Aman Hottentots.

Though the old camping order of the sibs has long been given up, the order of camping of the families within the sib is still maintained in many instances, and could be studied among the Swartboois even in 1923. It has already been stated that among all the Hottentots all the sons of one woman are called by her big name, her *gei khoi /ons*, while all the daughters are similarly called after the *gei khoi /ons* of the father. In a settlement, therefore, we should expect to find the huts of a number of men called by the same name. This is exactly what we do find, and they are ranged in order of seniority, the eldest brother furthest to the right, the youngest furthest to the left, as we stand, facing outwards, at the doorway of any hut.

In the past the Hottentots were polygynists, but never to the same extent as the Bantu tribes around them. Nowadays they are ostensibly monogamists, but the standard of morals is extremely low among them. Each family has its own mat hut where the children remain until they marry. I have found a number of

¹⁰ An Expedition of Discovery into the Interior of Africa, 2 vols., London, 1838; vol. I, p. 187; see also p. 211.

¹¹ *L.c.*, p. 274.

young girls sharing a hut together, and it may happen that a number of boys also share a hut, but this is not the general rule among the Nama. It is much more usual for the family to remain together until a new household is formed after marriage. Near each of the brothers in a family would be grouped his immediate dependents; his married sons on his right, the eldest furthest to the right, the youngest nearest to his father's hut, while on the left would be any married daughter who had not yet removed to her husband's people and any widowed sister who had come home to live with him. Other dependents of various kinds would also be camped to the left of a man's hut. Chief among these would be the *!Gan*, or servants, hardly to be called slaves, who were generally of the Berg Damara race, a people of negro affiliations which has long been in subjection to the Hottentots. Many Berg Damara even now are attached to Hottentot families as dependents. These people are free to marry as they will, and are never bought or sold, but they generally remain attached to the same family for long periods. Family servants is perhaps the best name for them. Many of those whose history I have studied were taken, or picked up, as small children by the Hottentots after one of the numerous wars when families were scattered and the children were left helpless in the veld, and they were then brought up in the family, acting as herdboys and in general counting themselves as members of the family. Intermixture of this black Race with the Nama is now taking place, but there is little trace of it having been frequent in the past.

It remains now to describe the conduct of people towards one another in the society, and this depends to a very large extent upon the kinship system, though relative age is also an important factor.

The kinship system of the Hottentots is a classificatory one with many similarities to the kinship systems found among the Bantu. The relative ages of the person speaking and of the person spoken of are very carefully recognised in these kinship terms. There is a special term for the mother's brother who stands in a very close relation to his sisters' children, and there are special

terms for cross cousins, corresponding to the special relation in which these people stand to one another.

The following are the terms arranged according to generations in a scheme devised by Professor Radcliffe-Brown, which enables one to get a very rapid insight into the general system:—

Second ascending generation. There is one term, //Náon, used for all persons, men and women, of all generations above those of the mother and father. The same word means the tip of an arrow, and so refers to the beginning of the family as it were. The singular masculine form, //Náob, is used for men, the singular feminine, //Náos, for women. The term //Náob is applied to the father's father, and the mother's father, and to the brothers of these, and also to the fathers and the fathers' fathers of all these men. The term //Náos is used for the father's mother, for the mother's mother, for their sisters, and for the father's father's sisters.

First ascending generation. My father is *Tatab*, and the term may be applied to my father's brothers, the older ones being distinguished as *Tata Geip*, that is big father, the younger ones being distinguished as *Tata ≠ Kami*, young father, or *Tatarob* which is the diminutive of *Tatab*. The term is further applied, with the proper modifications for older or younger, to the sons of my father's father's brothers, and to the husbands of my mother's sisters.

Other words for father are *Īp* and *Ēip* which can be used in direct address; //Gúb (from the verb //gā to be fertile) which is used only in speaking of the own father and never in direct address; and *Abob*, an archaic word used nowadays only in legends or in the Christian prayers translated into Nama.

My mother is *Mamas* and so also are her sisters, older ones being *Mama Geis*, younger ones *Mama ≠ Kams* or *Mamaros*. The term is used also for the wives of my father's brothers.

Mamas is the familiar term for mother. The most dignified term is *Ēis*, with its distinctions *Ēis Keis* and *Ēiros*. Another term is *Is* which can also be used in direct address. //Gūs is used only in speaking of the own mother, not in direct address.

My father's sister is nowadays called *Mugis* (or *Mugiros*, if she is young), but the older men and women deny that this is a pure Nama word. There is a Dutch word *Moeke*, meaning little mother, and it is most likely that this, together with many other terms of kinship, has been adopted by the Nama from the Dutch. My most reliable informants tell me that the old Nama way of addressing the father's sister was *Ēis Geis*, that is, big mother. This woman is also called *Tāras* or *Gei Tāras*,¹² the great respected one, and great deference is, or was, due to her. The father's sister's husband is called *Omeb* nowadays, a term most certainly borrowed from the Dutch Om(uncle). It can be used in the diminutive form *Omerob* also. This man may also be addressed as *Tatab* through courtesy, but there is no distinctive term applied to him.

My mother's brother is properly //*Náob* or //*Náosab*, but he may be called *Omeb* nowadays. His wife is //*Náos*, but she may be called *Mugis* now. The behavior due to this man will be described later.

Contemporary Generation. The children of my father, of my father's brothers, and of my mother's sisters, in fact, the children of all those whom I call *Tatab* and *Mamas* in their own right, are my brother, *!Gāb*, and my sister, *!Gās*. My older brother is *!Gāb Geib*, my younger brother is *!Gāb ≠ Kami*. The form *!Gāsab* may also be used. Nowadays, the forms *Butib*, *Butirob*, may be used from the Dutch Boetie (brother). My sister is *!Gās keis*, my younger sister *!Gās ≠ Kams* or *!Gāsas*. These terms are used by both men and women. The term *Sisis* is also in use, especially *Ousis*, from the Dutch *ou*, meaning old, and *Sussie*, meaning sister. The form *Sisiros* is formed with the Nama diminutive particle *ro*.

Nowadays, further, these relatives are sometimes distinguished as */Ge !Gāsab*, */ge !Gāsas* (from */ge* to have twins), that is, twin brother, twin sister, to distinguish them from the cross cousins who may be called //*Nūri !Gāsab*.

My father's sister's son is my //*Nūrib*. My father's sister's daughter is my //*Nūris*. These forms are used by both men and

¹² This word, *Tāras*, is to be very carefully distinguished from another *Tarás* which means wife.

women. If I am a man, I may call my father's sister's daughter *Tarás*, that is wife, while if I am a woman I may call my father's sister's son *Aob*, husband. Nowadays, these cousins may be called //Núri!Gāsab, //Núri!Gāsas, but these forms are admittedly late.

My mother's brother's son is my //Núrib, or, like his father, my //Náob. Or he may be called by a descriptive term, //Naob (Nōap's son). He may also be called //Núri!Gāsab. A woman speaking may call him *Aob*.

My mother's brother's daughter is //Núris, or //Núri!Gasas, or she may be called //Náos. A man speaking of her may call her *Tarás*, wife.

First descending generation. The term applied to children is *ōan* or /Gōan (boy *ōab* or /Gōab, girl *Ōas* or /Gōas), from the verb *oa*, to bear. These terms are applied to his own children by a man and to the children of his brothers, older or younger; and by a woman to her own and to the children of her sisters.

A man calls his sister's children //Núrin (/Núrib, //Núris), but there is no distinctive term by which a woman calls her brother's children. She uses a descriptive term, *!gāb Ōab*, *!gāb Ōas*, or *Tàrab Ōap*, *Tàrab Ōas*. Here we find the word *Tàrab* which is no longer used in reference to the brother himself but is still used in this combination. *Tàrab* corresponds to *Tàras* and means the one who must be respected.

Second descending generation. The children of any /Gōan are //Núrin. This is, then, the reciprocal term of //Náob and //Náos.

Relatives by marriage. A wife calls her husband *Aob*. The term is applied also by a woman to her sister's husband and her husband's brother. An old term for husband, no longer used, is *Xáib* (from the verb *Xái*, to have sexual intercourse). A husband calls his wife *Tarás* (formerly *Xáis*). The term is applied also by a man to his brother's wife and to his wife's sisters. The general term for relatives by marriage is /Uin, or !Nā Khoïn, from the verbs /úi and !nā to become related by marriage. Thus, it is applied in the masculine form, /úip, to the wife's father, the wife's brother, the sister's husband, the daughter's husband by a man; by a woman it is applied to the husband's father and the brother's

son. In the feminine form, /*Uis*, it applies to the wife's mother and the son's wife when a man is speaking. It applies to the husband's mother, the son's wife, the husband's sister, and the brother's wife when a woman is speaking.

The husbands of two sisters call each other /*Gámireb* or /*Gáméb*. The wives of two brothers call each other /*Gámes*.

!*Oaras* is a term sometimes used for the son's wife when a man is speaking. It is a general term applied to women who have married into the sib.

Practically all the old regulations with regard to marriage have broken down among the Hottentots. Marriage with any first cousin is now permitted, though on the other hand the older people are resisting the marriages of first cousins at all, whether direct or cross cousins. There is a difference here from tribe to tribe, some of them being more influenced by European contacts than others but the tendency in all is the same. All my older informants are agreed that the marriage of direct cousins was out of the question in the old days. With regard to the cross cousins there is some difference between the tribes. In some of them, e.g., the //*Haboben*, the *Gei* //*Khauan*, the //*Khau* /*Goan*, marriage with the mother's brother's daughter is said to have been far more usual than marriage with the father's sister's daughter. The terminology for these relatives seems however to show that in the past marriage with both the mother's brother's daughter and the father's sister's daughter was allowed, and the behavior towards these relatives confirms this. In addition, I have illustrations of both kinds of cross cousin marriage in genealogies.

The duties and privileges of relatives. The chief consideration in the behavior of Nama to one another is the relative ages of the people concerned. Respect for age is inculcated in every possible way, and the whole social organization of the people is an illustration of the fact. In the family deference and respect must always be paid to elders. Thus, of a number of brothers the eldest always has the honored place and the first voice in any debate. Family feeling is strong, however, and brothers generally hold together. The behavior proper to brothers is due to all those people called by the name "brother," and little difference is made by the fact

that they are often sons of fathers who are brothers and not sons of one man. Similarly, all women who are called "sisters" must be treated as sisters, and it would have been in the old days a most heinous offense for a man to have married such a woman. It is an indication of the complete transformation of the organization of the people that has taken place owing to Christianization and European influence, that the marriage of direct first cousins is now relatively frequent. In the old days the behavior of a brother and a sister was very strictly regulated. As tiny children they ran about together, but once they were grown up, they had to avoid one another completely. A brother was not allowed to speak to a sister directly, he must never be alone with her in the hut, he must never speak of her except in the most respectful terms. A sister was a *târas*, that is, a person to be respected, not to be spoken to or of lightly. In the old days an oath by a sister was one of the greatest oaths a man could take, and a sister could generally be relied on to stop any fight in which her brother was taking part. The brother is said to be shy (*sou*) in the presence of his sister, and the same is true of all the men a woman would call brother. Should one of these men use bad language in her presence a woman could demand a sheep from him with which to purify herself of the pollution. It is a *gei !Keis*, a great offense. Even at the present day a man will not sleep in his sister's hut when he visits her as a married woman. The eldest sister of a man is his *Gei Târas*, his great respected one.

Quite different is the behavior of a man to those of his own generation whom he calls //*Nûrin*. These women are his companions, his playmates. All is possible with them, free speech and horse play. Even sexual intercourse would not have been considered wrong. It was frequently one of these women that a man married in the old days.

The relation of a woman to her brother's children was one of great restraint. Just as the father himself had to behave with much circumspection towards this woman, so his children had to treat her with the greatest deference and respect.

The relation of a man to his sister's children was one of the greatest indulgence and good will. A boy could do almost any-

thing at his maternal uncle's *!Hèis*, or home, without being blamed for it. He could take, without asking, any of the specially fine animals among his uncle's herds, and the uncle had no redress but to take misformed ugly animals from his nephew's herds. This exchange was called *//núri //as*, and it is still practiced by the Nama to-day.

The only other relationship calling for special notice is that of a man to his relatives by marriage. To his wife's sisters, a man behaved much as he would to his wife, and even at the present day intercourse with them is common, if they are unmarried or widowed. Such relations are the cause of much trouble. A woman considered her husband's younger brothers as her husbands, and used in the old days to be inherited by one of them. In the early missionary records there are numerous instances of a younger brother taking over his elder brother's widow.¹³ This practice is, of course, strongly condemned by the missionaries who report these things, and it is interesting to note that the women seem to have taken advantage of the objection on the part of the missionaries to avoid this relationship in some instances.

His wife's mother had always to be treated with the greatest deference by a husband. They were said to be "shy" of one another, and the man might never look at her when speaking to her. There used in the past to be a special form of address between all relatives-in-law, the formal "You" being applied both to the mother-in-law, to the brothers of a man's wife, and to her father, but it is not so used nowadays.

In addition to the strict prohibition against marriage in the sib, a man was not allowed to marry a woman of the same great name as himself, even though she might come from a tribe different from his own. Such a woman would be regarded either as a mother if much older, or as a daughter if younger than the man. Nowadays, this prohibition, too, has ceased to be observed. I have instances in the genealogies, though not many, of such marriages having taken place.

¹³ Cf. Rheinische Missions Berichte, 1856, p. 321; also same Berichte, 1860, p. 21.

It will be seen from the account given of the kinship system and the "behavior patterns" accompanying kinship terms that the type of behavior which is expected of a person by another is directly indicated by the kinship term in use between them, so that a knowledge of these relationships is essential for an understanding of the whole moral regulation of the lives of the people.

There is just one other subject on which a few remarks may be appropriate. The relation of the tribes towards one another has been throughout the history of the Hottentots most capricious. On the one hand, one finds a great deal of intermarriage taking place between those tribes which happen to be near one another, and a great deal of visiting between the members of families so connected is always going on. Yet, on the other hand, there has never been sufficient feeling of solidarity between the tribes, for the Nama, or for the Hottentots in general, to organize themselves against a common enemy even when the danger was exceedingly great. Always one tribe has been played off against the others by all other peoples with whom they have come in conflict. There are many instances in their history in which two tribes have made an agreement with one another for some common object, but such agreements have always come to naught. There is even an interesting document,¹⁴ signed by most of the Nama and Orlam chiefs, agreeing to sink all differences and to unite against the common enemy, the Herero, but the agreement was never actually put into practice. So the Nama, and the Hottentots in general, are coming to be a people whose history lies all in the past, whose tribal organization is totally disrupted, and whose distinctive culture is becoming a thing unknown even to themselves, because of their failure to hold together, and to face the incoming cultures with a strong feeling of group solidarity.

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¹⁴ Drawn up in 1858. Translated in the Administrator's Report for S. W. Africa, 1922.

AMERICAN INDIAN POETRY

By EDA LOU WALTON AND T. T. WATERMAN

THE TWO authors of this article have noted with much interest and no little pain certain published material on the poetry of the American Indian, and they wish to rise, jointly and severally, to be heard on this topic. One of them, the senior in years, and masculine, is a newcomer in matters of poetry, in which field the present is his maiden effort. He is interested in Indian verse, without having very much familiarity with verse in general. The other author, junior in years and feminine in persuasion, has worked in some detail on the poetry of one tribe, the Navaho, and has a professional interest in matters of versification. There are certain things in the minds of these two which they feel ought to be said. So they proceed under a number of headings.

IS THE INDIAN A POET?

He certainly is.

A few sentences from the opening pages of Miss Barnes' study of American Indian verse (listed with other authorities quoted in the bibliography below) express what the present writers also feel. She finds for example that American Indian verse nearly always exhibits an exalted feeling. She discovers in Indian verse what we may call a loftiness of style and often a fine nobility and dignity of thought. There is never any self-satisfaction or smugness and there is always imagination, a sense of beauty and lofty poetic diction, plus a variety of verse forms. These things make poetry. The present writers venture to give below some Simon-pure examples of Indian verse as it appeared in the original printed sources. To these are added comment, largely the junior author's, on the characteristics of the poetic work, from the standpoint of style.

IS THE INDIAN AN UNTRAMMELED CHILD OF NATURE?

He certainly is not.

The Indian in some cases is a most sophisticated person, with a highly artificial point of view, highly developed tastes in the

matter of literary form. He is often familiar with most carefully-worked-out schools of versification, and always possesses a taste which has been elaborated by centuries of development in a certain tribal atmosphere. Certain interests predominate among the Indians in one area, while elsewhere other interests rule his thought and feeling. Indians are much less untrammelled children of nature than we are. Any one of our own poets has the world before him, all periods and cultures more or less in his perspective; often jumbled together, it is true, but nevertheless setting his fancy free. There are pounded into every Indian, on the contrary, from the moment he first breathes, the ideas and the outlook of his particular group, which is a very limited one; and so his point of view and his genius are hedged in. Rousseau and Voltaire were wrong. The "savage" has less personal liberty than any of us. Even his mind is cramped, and he conforms religiously to the *mores* of his time and place; for that inheres in being a savage. It is obvious to the two authors now speaking, that there must be differences in the poetry of different tribes, fully as definite, if not so conspicuous, as the differences in their habits of dress or their habitations. The Indian's poetry is no more untrammelled, then, than his ideas of costume. We feel sure that the poetry of the Plains Indians cannot in the nature of things be the same as the poetry which one would find among the Pueblos, or among the fisher tribes of the Alaska coast. To chatter, therefore, about *the* Indian's ways, or style of composing, as though all the Indians were on one level, is very pointless; very childish and naive. Fancy the absurdity of talking about the way *the* Indian builds his dwelling, when every passer-by knows that there are many styles of house construction. There is no reason to doubt that there are as many forms of poetry, or perhaps more; the members of every tribe poetizing as best they can, each after his kind and after the style and viewpoint (the only style and viewpoint he knows) of his tribe.

The following passage, accordingly, from Cronyn's book of Indian verse, represents exactly what the present authors think is not true.

"The Indian poet," says the critic (Constance Skinner, speaking in the *Path on the Rainbow*, p. 344) "discerns the tribe's daily doings anew, poetically. He sings of them in rhythms suggested by the flicker of camp-fires, the swish of wind-dancing figures, the swirl of tree-tops, the slow march of hills under clouds and changing lights. . . ."

Assuming that this passage has a meaning, it seems to express exactly the wrong idea. Consider, for example, the obvious fact that practically all of the published verse of the Indian is ceremonial. Is it reasonable to suppose that part of an elaborate priestly ritual, to take an instance, which has been growing together and solidifying through centuries, would necessarily fall into a rhythm suggested by flaming campfires; or a meter resounding with the boisterous freedom of the wind in the tree-tops? Such empty verbiage tries one's patience. The present authors, at any rate, entertain exactly the opposite conviction. They are inclined, knowing the Indian's sophistication along many lines, to look for tribal patterns in versification, perhaps widely different in different areas.

SOME SPECIMENS OF NAVAHO POETRY

From W. Matthews, *The Night Chant* (p. 77).

In the House of the Red Rock,
There I enter;
Half way in, I am come.
The corn plants shake.
In the House of Blue Water,
There I enter;
Half way in, I am come.
The plants shake.

From W. Matthews, *The Night Chant* (p. 272).

From a place above, where he stands on high,
Hastsealyuha, where he stands on high,
Says "Your body is holy," where he stands on high.

From a house below, where he stands on high,
Hastseyalti, where he stands on high,
Says "Your body is holy," where he stands on high.

From W. Matthews, *The Night Chant* (p. 78).

At the Red Rock House it grows,
There the giant corn plant grows,
With ears on either side it grows,
With its ruddy silk it grows,
Greatly multiplying grows.

From W. Matthews, *The Night Chant* (p. 81).

In a holy place with a god I walk.
 In a holy place with a god I walk,
 On Tsisnadzini with a god I walk,
 On a chief of mountains with a god I walk,
 In old age wandering with a god I walk,
 On a trail of beauty with a god I walk.

From W. Matthews, *The Night Chant* (p. 280).

The Slayer of the Alien Gods,
 That now am I.
 The Bearer of the Sun
 Arises with me,
 Journeys with me,
 Goes down with me,
 Abides with me;
 But sees me not.

The Child of the Water,
 That now am I.
 The Bearer of the Moon,
 Arises with me,
 Journeys with me,
 Goes down with me,
 Abides with me;
 But sees me not.

From W. Matthews, *The Night Chant* (p. 153). The words in italics are not in the original version but are retranslated from the Navaho by Eda Lou Walton.

From the pond in the white valley. . . .
 The young man *believes it not*.
 . . . the god takes up his sacrifice.
 With that he now heals.
 With that your kindred thank you now.

From the pools in the green meadows.
 The young woman *believes it not*. . . .
 He now takes up his sacrifice,
 With that he now heals.
 With that your kindred thank you now.

From W. Matthews, *The Night Chant* (p. 293).

My great corn plants,
 Among them I walk,
 I speak to them;
 They hold out their. . . hands to me.

My great squash vines,
 Among them I walk,
 I speak to them;
 They hold out their hands to me.

From W. Matthews, *The Night Chant* (p. 294).

He has a voice. He has a voice.
 Just at daylight *Sialia* calls,
 The Bluebird has a voice,
 He has a voice, his voice melodious,
 His voice melodious, that flows in gladness.
Sialia calls, *Sialia* calls.
 I an ee

From W. Matthews, *Navaho Myths, Prayers, and Songs* (p. 27). A legend explains the following song. Dawn-Boy, son of the White Corn, wandering among his people, comes to the Red Rock cliff-house which the Navaho regard as the dwelling of the gods. There he sees the kethawn, hanging thick with pollen, in front of the door. He sees behind the fire the sacred striped cotton fabric covered with pollen. He remembers that he has brought gifts to the gods. At last he enters the house, the revered and beautiful house of old age, the house in which there is beauty all around him.

Where my kindred dwell, there I wander.
 Child of the White Corn am I, there I wander.
 At the Red Rock House, there I wander.
 Where the dark kethawns are at the doorway, there
 I wander.
 With the pollen of dawn upon my trail, there I wander.
 At the yuni the striped cotton hangs with pollen.
 There I wander.
 Going around with it, there I wander.
 Taking another, I depart with it. With it I wander.
 In the house of long life, there I wander.
 In the house of happiness, there I wander.
 Beauty before me, with it I wander.
 Beauty behind me, with it I wander.
 Beauty below me, with it I wander.
 Beauty above me, with it I wander.
 Beauty all around me, with it I wander.
 In old age traveling, with it I wander.
 On the beautiful trail I am, with it I wander.

From W. Matthews, *The Mountain Chant* (p. 459). Anything that suggests rain to the Navaho suffuses his bosom with emotion. The thunder brings the rain, and the grasshoppers chirp *after* a rain; so the Navaho puts the two "voices" together into the following quaint lyric.

The voice that beautifies the land!
 The voice above.

The voice of thunder
 Within the dark cloud
 Again and again it sounds,
 The voice that beautifies the land.

The voice that beautifies the land!
 The voice below;
 The voice of the grasshopper,
 Among the plants
 Again and again it sounds,
 The voice that beautifies the land.

From W. Matthews, *The Mountain Chant* (p. 463, No. 249).

The poet sings of the dawn curtain flung out across the east by Dawn-Boy, the Navaho god of daybreak, a curtain hanging from the holy one's head to his feet. A second stanza tells of Dawn-Girl, a Navaho goddess of daylight, who hangs her curtain of light in the western sky as the day dawns, but this stanza is largely a repetition of the one here given and so is omitted.

The curtain of daybreak is hanging.
 The Daylight-Boy (it is hanging)
 From the land of day it is hanging;
 Before him as it dawns it is hanging;
 Behind him, as it dawns, it is hanging;
 Before him, in beauty, it is hanging;
 Behind him, in beauty, it is hanging;
 From his voice, in beauty, it is hanging.

From Cosmos Mindeleff, *Navaho Houses* (p. 507).

From the east, far below, there a house was made;
 A delightful house.
 The house of the God of Dawn was made;
 Delightful house.
 There the house of White Corn was made;
 Delightful house.
 There a house was made for soft possessions;
 Delightful house.
 For the plentiful water surrounding it a house was made;
 Delightful house.
 For Corn Pollen a house was made;
 Delightful house.
 The ancients made their presence delightful;
 Delightful house.

From W. Matthews, *Songs of Sequence of the Navajos* (p. 191). The senior author thinks that this is a very clever piece of parallelistic writing.

The corn grows up. The waters of the dark cloud drop, drop.
 The rain descends. The waters from the corn leaves drop,
 drop.
 The rain descends. The waters from the plants drop, drop.
 The corn grows up. The water of the dark mists drop, drop.

UNDERSTANDING NAVAHO POETRY

An appreciation of Navaho song presupposes a certain amount of appreciation for the Navaho. An understanding of the quiet simplicity and dignity of the life of these people is the only thing that can lead to a real comprehension of their verse. The Navaho is a thoroughgoing mystic, even though he loves orderliness in his ceremonies (which are most elaborate) and in the chants, like those just given, which accompany his rites. He is matter-of-fact, he adjusts himself adroitly to the business of living in a very difficult environment, but through his inner vision the adjustment is for him made beautiful. The heavy "male" rain of the thunderstorm, the gentle "woman-rain" of spring, are worshipped by the Navaho in awe and in love. Everything which is real to these people is looked upon as divine; and the divine to them is very real. They know a kind of poetic vision, which comes to them individually, and enters into the routine of their daily lives. They are aware that they live in a divinity-inhabited world. They and their poetry are therefore utterly genuine. Dr. Matthews once asked from an old priest, it seems, to whom his tribal gods were by no means mere abstractions, some information concerning the creation myths. Before telling the myth, the old priest humbled himself before the divinity he felt all about him, and repeated with great earnestness the following words addressed to the Earth-mother, the Sky-father, and the other supernatural powers, including the divinity he sensed within himself.

From W. Matthews, *Navaho Legends* (p. 258). Translated from the original Navaho by Eda Lou Walton.

Horizontal woman, before you shame I have;
Above-darkness, before you shame I have;
Dawn, before you shame I have;
Horizontal-land-yellow, before you shame I have;
Horizontal-land-blue, before you shame I have;
Darkness, before you shame I have;
Sun-bearer, before you shame I have;
That within me standing, with me speaking, before you
shame I have;
Never am I out of sight,
Therefore truth I tell,
Therefore truth I always tell,
My word, to my breast I hold you!

Navaho verse represents an unusual combination, a mixture of a somewhat stereotyped set of phrases, formulas almost, with sincere poetic figures. It has a quiet serenity, a quiet exaltation, which cannot but at times sweep over the reader. For the Navaho, gods walk before his footsteps and behind. He walks in the midst of gods. The junior author finds that what may be called a kind of sublimity, is the most essential element in Navaho song. The senior author admits the truth of this statement on the authority of his colleague, and leaves her to explain what she means for herself, and in her own words.

"By sublimity I mean that element in poetry which lifts it above the level of personal experience or emotion into the religious or universal expression of life's true significance. Such poetry has value for *all* time and for *all* peoples. The poet has seen in his subject something of the spirituality which remains in life and uplifts it even at its most desperate and hopeless moments."

The range of ideas expressed in Navaho verse is small. It is possible, however, that the verse we have been reading is not truly representative. There may be a vast store of unused poetic images within the mind of the Navaho poet. Eliminating this possibility from the discussion, for there is no easy way of getting at the facts, we must recognize, to quote Miss Walton further, "that ripples of symbolic and mystical meanings, not perceptible to our pagan senses, extend out, in the mind of the Navaho, from the impact of every statement, no matter how simple, upon the singer's mind, and the mind of native listeners. This is perhaps what gives Navaho verse its spiritual quality."

THE METER OF NAVAHO VERSE

There is a meter. But it is not a regular meter, and, for several reasons, it is not very apparent. In the first place, one must (obviously) look for it in the original text, not in an English paraphrase. In the second place, it is a musical rather than a verbal rhythm, or perhaps the result of a struggle between the two, for these Navaho poems were all chanted. We may consider here what George Adam Smith says about Hebrew poetry. "If

parallelism be the characteristic and dominant form of Hebrew verse, if the Hebrew poet be so constantly bent on rhythm of sense, this must inevitably modify his rhythm of sound. . . . It follows that these lines cannot be always exactly regular in length or measure of time." The set phrases occurring in Navaho chants show, according to careful analysis made by the junior author, more definite meter than do the narrative lines. Where formulae predominate in Navaho verse, there is distinctly a more definite metrical pattern than elsewhere. We ought to remember, however, that the Navaho was by no means writing jingles. The *metrical* form is one of the last things he would, in the nature of things, care about. Saintsbury says that in the later works of Shakespeare, broken lines and redundant syllables, that is, metrical irregularities, are very numerous, caused, by the master's hand, to become things of beauty. We find among the Navaho an almost complete divorce between poetry and meter. Their compositions *are* poetry; but their poetry will not scan.

SIMPLE PREDICATION AS A MAIN FEATURE OF NAVAHO VERSE FORM

A conspicuous feature of Navaho poetry is that it consists of a series of statements connected with each other only through their reference to a thread of inner meaning which runs through each song. These songs are often at first glance somewhat obscure, for in them no proper sequence of ideas appears. Apparently the idea of the first line may be quite unrelated to that of the second. Usually no meaning can be discerned in a ceremonial song until a knowledge of its background (that is, of the religious conceptions of the tribe) supplies the relation of each statement to the underground idea. Each predication is woven, as it were, in a warp of mythical significances, the hidden threads of which connect it with the next predication. Such predications are mainly concerned with symbols, and each religious symbol referred to in a statement, carries with it in the minds of the Navaho listener, a perfect aura of mythical associations and mystical emotions. These, when they are understood, supply the unity of the poem.

"For" as Miss Austin comments, "verse is to a Red singer but a shorthand note to his emotions, a sentence or two, a phrase out of the heart of the situation. It is this 'inside song' alone which is important. Says the medicine man, explaining these matters, 'You see Injun man singin' and cryin' while he sings. It ain't what he singin' make him cry, it's what the song make him think, tha's what he cryin' about.' "

Anything which has ever been used to represent in religious art or religious thought, a certain inward idea, or a certain story, or dogma, may carry with it a background of spiritual significance. When Wesley, for example, wrote:

Lamb of God, I look to thee.
Thou shalt my example be.
Thou art gentle, meek and mild,
Thou wast once a little child.

he knew that the minds of his hearers would at once reach back of these predications; and we do so reach back of them without difficulty. A Navaho, however, untaught in Christian belief, would find these lines just as baffling as anything could well be. How can a *lamb* be a *child*; and if so, what of it? He would be completely puzzled.

In a similar way the Navaho poet, using his own symbols, also knows that his listeners will understand him, that his bare predications stated without connection or logical exposition of their relation to each other, will for his kinsmen seem clear, beautiful, and complete expressions of his emotion. Sometimes the predications in these songs are not only expressions of a desire, but may be statements of an action which is part of a rite. Where this is true, the songs are doubly obscure unless the action which accompanies the rite is known. For example, in a "song to sweep off with" the desire, the wish, the yearning and prayer for corn and rain, is followed in the third line by a statement of an action which symbolizes the sweeping off of disease, because (simply enough,) this action of sweeping was going on at the moment of singing.

From W. Matthews, *The Night Chant* (p. 282). The separation into verses is modified from the original text.

The corn comes up; the rain descends
Nayayaie anhane
I sweep it off. I sweep it off.
Anhane.

The rain descends; the corn comes up
Nayayaie anhane
I sweep it off. I sweep it off.
Anhane.

If the ritual *action* were not understood, the third line of the song would be interpreted as referring back to the first, which would make, of course, no sense at all.

Even in the songs which tell stories, we find something of the same manner of presenting what may be called a novelistic plot. No story can in itself be clear, if the singer depends upon the subconscious fringe of the listener's mind to supply gaps in his tale. In Navaho songs the connection is often very bad. In our English ballads also such gaps occur, but they are easily bridged by the mind of the listener. The story as a whole is there, for were it not, we could not today so easily follow the telling. When a Navaho woman sings of a mythical adventure, similar mental leaps must be made to keep the listener abreast of the plot.

From W. Matthews, *The Mountain Chant* (p. 462); translated from the Navaho by Eda Lou Walton.

Young-woman-bear-she-becomes, the holy ones
seeking she went;
Them she found, aie.
Mountain peaks many tapering, the holy ones
seeking she went;
Them she found, aie.
Truly my, my sacrifice with, the holy ones seeking
she went;
Them she found, aie;
Yani; some one doubts it, I have heard.

Here we have the story of a goddess who, by the efficacy of the sacrifices, sought the holy ones among the mountain peaks, and found them. The last line forms a climax to the preceding lines. This poem is a good instance of the Navaho's rather infrequent use of a sharp and surprising climax. But a real affection

on our part for such verse implies some knowledge of Navaho ways. The gap between their point of view and ours is somewhat hard to bridge.

In a manner not very different from the English ballads, Navaho stanzas often develop the tale, where there is a tale, incrementally, line by line, stanza by stanza. Consider, for example, this song:

From W. Matthews, *Navaho Legends* (p. 261); translated from the original Navaho by Eda Lou Walton.

Alien-Gods-Slayer, for me, for myself, he brings;
Yeyeyena!
Now his horn, for me, for myself, he brings;
Yeyeyena!
Truly one, his lung, for me, for myself, he brings;
Yeyeyena!
The people are restored, for me, for myself, he brings;
Yeyeyena!

Here Estsanatlehi, Woman-who-changes, sings of the prowess of her son. She states in the first line that he is bringing something to her; in the third line she states that this something is part of the Monster, his horn, a sign of his death, as it were. The seventh line gives the result of her son's bravery, the restoration of the people. An examination of many songs will show a similar method of procedure, where a definite story is the underlying idea.

Even the other songs, where there is no story, are usually not difficult to understand, if one makes the effort. For example, the following:

From W. Matthews, *Songs of Sequence of the Navajos* (p. 187).

The sacred blue corn-seed I am planting,
In one night it will grow and flourish,
In one night the corn increases,
In the garden of the home-god.

The sacred white corn-seed I am planting,
In one day it will grow and ripen,
In one day the corn increases
In its beauty it increases.

When a certain creature pursues the wildcat, the fear and anger of that animal are pictured in a few lines.

From W. Matthews, *Navaho Gambling Songs* (p. 18) translated from the Navaho by Eda Lou Walton;

Wildcat, i i,
He is walking, e,
Wildcat, i i,
He is walking, e,
Down he began to run
A place toward; at him I ran,
"Rauu," to me he said.

In the group of gambling chants from which the last was selected we find the "Magpie's song," a metaphorical expression of the coming of dawn. Like the white which tips the magpie's wing, are the white feet of day stepping on the mountain tops.

From W. Matthews, *Navaho Gambling Songs* (p. 9), retranslated from the original language by Eda Lou Walton.

A'a'ai-ne! a'aai-ne!
Ya'ani-ainè! Ya'a'ni-ainè!
Here underneath
His wings, the white in,
His feet the morning are.
It dawns! It dawns!

Because simple predications so largely predominate in the songs of which our published sources consist, we may presume that this is the Navaho method. Such a method allowing the listener's mind to supply the connection, is, it seems to the present writers, a meet, right, and fitting method for a great religious poetry, which, in both our opinions, is a true characterization of Navaho poetry. The Biblical Psalms, for example, are faulty *for us* in somewhat the same way. They are compositions high in the poetic scale, but do not in their pastoral imagery signify to us of today all that they signified to the pastoral people who composed them. Yet their lines are for us still resonant with the deep religious emotion in which they originated. There is a poetic greatness in Navaho verse, though it would not appear perhaps to a totally unsympathetic eye. They are much further removed from us than the ancient Hebrews are.

PARALLELISM IN NAVAHO POETRY

Parallelism, a correspondence of terms in one line to those of another in respect of meaning, not in respect of number of

syllables or of rhythmic groups, is an inner orderliness of intellectual expression, but it is based upon a universal biological principle, repetition with variation. Parallelism, wherein the emotions of man swing like a pendulum back and forth across the same idea, exemplifies, as Merder remarks, the larger movement of the life rhythm, "wherein deep calleth to deep, tree to tree, bird to bird all the world over." As the simplest organism expresses desire through repetitive action, so man tends to phrase his emotional thought in iterative statements.

These and a number of other considerations lead one to look for parallelism in any primitive poetry. It is, also, a device which never fails of an inner appeal, as witness the national epic of Finland (the *Kalevala*) or Longfellow's *Hiawatha* (which even small children love). The loftiest examples of parallelism are those of the Old Testament, the best study of which is Popper and Newman's. There is a temptation to quote some examples of Biblical parallelism, which are among the finest things in literature.

For example, an "envelope" parallelism, in which a series of parallel verses are enclosed between an identical opening and closing, is the following:

From Moulton, *The Literary Study of the Bible* (p. 53).

By their fruits shall ye know them.
Do men gather grapes of thorns
Or figs of thistles?
Even so every good tree bringeth forth good fruit,
But the corrupt tree bringeth forth evil fruit
.
Therefore, by their fruits shall ye know them.

An example of a "chain" parallelism, made up of a succession of clauses so linked that the goal of one clause becomes the starting point of the next, is the following, found in the book of Joel (ch. 1:4).

From Moulton, *The Literary Study of the Bible* (p. 52).

That which the palmer worm hath left
Hath the locust eaten;
And that which the locust hath left
Hath the canker worm eaten;
And that which the canker worm hath left
Hath the caterpillar eaten.

The critics recognize as "repeating" parallelism, the type in which a second line repeats the thought of the first in slightly different form. A good example is the War Song of Lamech, in the fourth chapter of Genesis:

Ada and Zillah, hear my voice,
Ye wives of Lamech, harken unto my saying,
For I have slain a man for wounding me,
And a young man for giving me pain;
If Cain shall be avenged sevenfold,
Surely Lamech seventy and seven fold.

or the old familiar lines from Isaiah:

He shall come riding upon an ass,
And upon a colt, the foal of an ass;

the passage which is so comically misconstrued by the New Testament author of the Palm Sunday story, who mounts the Saviour upon a she-donkey, with a colt running by her side "that the saying might be fulfilled, 'He shall come riding upon an ass, and upon a colt, the foal of an ass'." It is to be remarked that a still simpler form of parallelism exists, which might be called absolute parallelism, where a phrase or verse is mechanically repeated over and over as a refrain. So in the Psalms:

Sihon King of the Amorites,
For his mercy endureth forever;
And Og the king of Bashan;
For his mercy endureth forever.

The Old World example most strikingly like our Navaho poetry is a Babylonian hymn:

From Langdon, Sumerian and Babylonian Psalms (p. 39).

Which like the spirit is whose secret founded, whose
secret none knoweth;
His word like the spirit is founded, whose secret
none knoweth;
The word of Anu like the spirit is founded, its secret
none knoweth;
The word of Enlil like the spirit is founded, whose
secret none knoweth;

.

The word which stilleth the heaven on high;
The word which causeth the earth beneath to shudder;
The word which bringeth woe to the Annunaki.
His word hath no seer, no prophet hath it.
His word is an onrushing storm which none can oppose.

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The junior author has analyzed every line of Navaho verse to be found in print, with the following results as regards parallelism. Seventy percent of all Navaho parallelisms are of the "complete" form, with an exact correspondence between the two numbers. This is a striking fact; and would hardly bear out Miss Skinner's dictum that the poetry of the Indian is an involuntary, elemental echo of the breezes swaying the tree-tops, or whatever her idea was. On the contrary, Navaho poetry is obviously a highly evolved and highly refined product. Within the couplets which are of this regular type, precedence is given by the Navaho to a simple repetitive parallelism, which type makes up forty per cent of the whole. Of little importance to the Navaho is the subvariety in which the order of ideas becomes transposed, which type is found in only one per cent of the cases; this in spite of the fact that it was a form much cultivated by the Hebrews. The case is similar to what might be called incremental parallelism. This is common in Navaho poetry, and the order is carefully repeated in a large number of cases, making up thirty-two percent of the whole number of parallelisms. The cases in which the parallelism is incremental, but the order transposed, make up four per cent of the whole. Antithetical parallelisms constitute about sixteen per cent of the whole number, transposition within the antitheses being very rare. Navaho verse form is therefore based primarily on "complete" parallelism. The junior author is much impressed by a sense of variety which she receives in reading Navaho poetry, a variety or liveliness which maintains itself in spite of the comparative uniformity of outward form. She finds an explanation for this effect of variety and liveliness in the fact that the more relentlessly parallelistic verses occur in the *preludes*. After the prelude is finished, the sense moves forward rapidly or even dramatically. The junior author also discovers both in the poetry of the Navaho and in Indian verse somewhat

generally, a type of parallelism not found in the Bible, where the iteration is an iteration of meaningless syllables. Such iteration is found, for example, in the songs of the Chippewa, Omaha, and Teton Sioux. This is a point where Indian verse diverges from the Hebrew poetry of our present Bible.

In the meantime it is important to bear in mind that the study of all the Navaho verse which has been published, shows that certain types of parallelism are fundamentally in control of it. The junior author believes, and the senior author agrees with her, that the Navaho singer would no more consider breaking away radically from the tribally approved verse-pattern than an English poet of the age of Pope would have considered a complete break with the heroic couplet. The completeness of Navaho parallelism is certainly its most striking feature; and shows, we think, that its estate is far from primitive.

The junior author is also struck with the fact (which the senior author never suspected) that Modern Irish and Scottish poetry, like English *songs*, runs strongly to a parallelism similar to that of the Navaho. This Gaelic type of poetry is somewhat naively emotional. For example, hear Thomas More, in *synonymously* parallelistic strains:

Oh! the days when I was young,
When I laughed in fortunes spite,
Talked of love the whole day long,
And with nectar crowned the night;

or T. G. McGuire, with his *incrementally* parallelistic ditty:

Twice have I sailed the Atlantic o'er,
Twice dwelt an exile in the west;
Twice did kind nature's skill restore
The quiet in my troubled breast.

Caroline Norton chants in measures of *alternating* parallelism:

I would not give my Irish wife
For all the dames of Saxon land;
I would not give my Irish wife
For the Queen of France's hand.

The place of parallelism in the English ballads or in the poems of Scott and Burns is too well known to need comment. The

cadences got by the subtle use of parallelism seem to be the secret also of Walt Whitman's metrical power. In brief, the junior author regards parallelism as a first-class lyric device; and she regards the Navaho chants here reprinted as examples of a high form of lyric. We would never find among any people, however, who were less genuinely lovers of ritual than the Navaho are, that extreme orderliness which is found in the Navaho chants. The idea of the infinite, simply and concretely expressed, is very near to the Navaho as part of his daily life. Hence it takes poetic expression in a concreteness which carries an over-plus of dignified emotion. Navaho poems are, therefore, fine examples of simplicity and orderliness, coupled with beauty. We must concede that to the Navaho, there is more beauty in the simple than in the ornate.

Perhaps he is right.

POETRY OF THE PUEBLOS

From H. R. Voth, *The Oraibi Powamu Ceremony* (p. 129).

Come this way;
Array yourself:
Come this way
Array yourself.
From the north,
A perfect corn ear
My clan-mother,
Oriole bird
In the middle of your tail
You are carrying.
You have now come
Dressed to the dance.
Yes, well now, to the dance,
Come here,
To the dance.

From Matilda Stevenson, *The Sia* (p. 125), a song of the Snake Society.

Priest of the spruce of the north, send all your people
to work for us;
Priest of the pine of the west, send all your people
to work for us;
Priest of the oak of the south, send all your people
to work for us;
Priest of the aspen of the east, send all your people
to work for us;

Priest of the cedar of the zenith, send all your
 people to work for us;
 Priest of the oak of the nadir, send all your people
 to work for us.

Hö channi of the white floating clouds of the world;
 Hö channi of the clouds like the plains of the world; . . .
 Hö channi of the thunder people of the world;
 Hö channi of the rainbow people of the world;
 Hö channi of the cloud people of the world—
 Send all your people to work for us.

Hö channi of the spruce of the north;
 Hö channi of the pine of the west;
 Hö channi of the oak of the south;
 Hö channi of the aspen of the east;
 Hö channi of the cedar of the zenith;
 Hö channi of the oak of the nadir; send all your people
 to work for us.

.

In such Hopi and Sia songs as these, we find nothing spontaneously poetic. There is, moreover, nothing that is truly majestic. Line follows line in the fixed order of ritualistic procedure. The song pattern is inflexible. For example, in Sia songs there must be six parts, for north, south, east, west, zenith, and nadir. If a song had not six lines in a certain order, six stanzas in the same order, the Sia listening would be completely perplexed and troubled. To him the song would be unfinished; out of it he would get no aesthetic experience at all. Pueblo songs in general express nothing but a very brief established list of ideas. Beauty in a song for a Pueblo Indian lies not in the beauty of its poetic images, the freshness of its mystic vision, but in the perfectness with which it conforms to an established pattern. There is little about their songs to suggest a creative way of looking at life. Meanwhile we may note that those of our own hymns which have the greatest popular appeal are also, with rare exceptions, those which are *least* expressive of deeper spiritual feelings. Consider, for example, such a popular ditty as "*Work, for the night is coming.*" This is no more, poetically speaking, than a sort of pious drinking-song. Let us therefore not *blame* the Pueblo Indians. They are very much like ourselves. Their poetry, however, does lack the feeling

and the majesty of Navaho poetry; which is a quaint and curious fact, considering their higher level of culture.

PIMA POETRY

The Pima relate thought to thought in their songs much less clearly than do the Navaho. They tumble so many descriptions and ideas into a single song that the song is by no means as definite an artistic unit as is the case among the Navaho. Once the Pima song starts off, once the idea gets into full swing, it rambles on in its own way. Except for a certain habit of repeating groups of lines, no principles of patterning are at all apparent. Their songs for the most part are a mixture of magical phrases *interlarded* with little nature pictures. The rhythm throughout has the regularity we might expect in dancing songs.

From Frank Russell, *The Pima*, (p. 292). This is Mr. Russell's literal interlinear translation, not his versified arrangement.

Swallow birds,
Here with me songs more commence,
Here with me, singing,
Poor women together stay.
Here with me, singing,
Poor women together stay.
Here with me singing.

On the rocks the swallows meet, standing.
On the rocks the swallows meet, standing.
There (they) brought me,
There (they) brought me.
There around me

Blue rainbows appeared.
On the rocks swallows meet standing.
There (they) brought me,
There around me
Blue rainbows appeared.

.

We are basket-scraping, singing;
We are basket scraping, singing;
In the evening, thud,
I am listening
On these my feather tips,
Clouds there are hanging.

We are basket-scraping, singing;
 We are basket-scraping, singing;
 In the evening, thud,
 I am listening

The following is Mr. Russell's versified arrangement of the remainder of this song. The difference in style and sense between his literal and his versified visions is only too obvious. Evidently his metrical versions are more Russell-ized than Pima.

From Frank Russell, *The Pima* (p. 294).

I ran into the swamp confused:
 There I heard the Tadpoles singing.
 I ran into the swamp confused,
 Where the bark-clothed Tadpoles sang.

 In the West the Dragonfly wanders,
 Skimming the surface of the pools,
 Touching only with his tail. He skims.
 With hopping and rustling wings.

 Thence I run as the darkness gathers,
 Wearing cactus flowers in my hair.
 Thence I run as the darkness gathers,
 In fluttering darkness to the singing place.

The following selections are interesting enough, but they are so different in arrangement and thought from Mr. Russell's own interlinear translations of the Pima that their value as primitive poetry is doubtful.

From Frank Russell, *The Pima* (p. 283).

Singing to the gods in supplication;
 Singing to the gods in supplication;
 Thus my magic power is uplifted.
 My power is uplifted as I sing.

 Along the crooked trail I am going
 Along the crooked trail going west.
 To the land of rainbows I'm going;
 Swinging my arms as I journey on.

From Frank Russell, *The Pima* (p. 277).

Up the cliff, steep and smooth,
 Up the cliff, steep and smooth,
 Up the cliff, steep and smooth,
 Climbs elder brother.

With his shining power
Up the cliff, steep and smooth,
Up the cliff, steep and smooth,
He climbs, step by step.

From Frank Russell, *The Pima* (p. 292).
In the distant land of Eagle
In the distant land of Eagle
Sounds the harmonious rolling
Of reverberating thunder.

From Frank Russell, *The Pima* (p. 284).
The bright dawn appears in the heavens;
The bright dawn appears in the heavens,
And the paling Pleiades grow dim.
The moon is lost in the rising sun.

Even the somewhat formal Pima songs, which are definitely connected with their cosmological myths, are much less conventional in phrasing and in pattern than are the Pueblo or Navaho compositions.

From Frank Russell, *The Pima* (p. 273).
I have made the sun!
I have made the sun!
Hurling it high
In the four directions.
To the east I threw it
To run its appointed course.

There is a good deal of Pima song available for study, but it is too desperately monotonous for reprinting here. Aside from mere repetition, the Pima songs show little effort at definite arrangement, barring a few weak essays in the direction of an incomplete parallelism. They have no burdens, if our observers have correctly recorded them, no preludes or refrains. Stanzas are of varying lengths. The ideas of a song may be varied and quite disconnected. Their stanzas seem to be expressions of experiences which are felt to have a magic significance. The composer seems to feel little or no restraint in the matter of form, except the necessity of emphasis through saying the same thing over and over again. We find in their poetry bright and happy nature pictures, and a kind of rollicking variety of figures, but no discoverable unity of thought. Both the authors of the present

essay suspect that the Pima songs have been carelessly recorded, and badly translated. They are unwilling to believe that any Indians, least of all the very pleasant and companionable Pima, would write such thoroughly bad verse as most of it is. But this is not a matter that could be argued in the absence of other examples of their poetry.

POETRY FROM THE STANDPOINT OF CULTURE AREAS

Those of us who are familiar at all with the idea of culture areas among the North American Indians would be inclined from the outset to look for some definite traits or other to be characteristic of the poetry, say, of the Southwestern area. Meanwhile it is the *differences* in this area, such as those brought to light in the preceding, which are most striking. One would certainly look for more highly developed poetry among the agricultural Pima than among the migratory Navaho. The contrary is found to be the case. The poetry of the Pueblos also is something of a shock to the investigator. The junior author believes that the ceremonialism of the Pueblo tribes has gone so far as to have a sort of petrifying influence on their poetry. Certainly their verse is not as lofty or poetical as that of the Navaho.

Some extremely primitive tribes have very beautiful poetry indeed. Consider the following from the Eskimo:

From H. Rink, *Tales and Traditions of the Eskimos* (p. 68).

I look to the south, to great Mount Koonak,
To great Mount Koonak, there to the south;
I watch the clouds that gather round him;
I contemplate their shining brightness;
They spread abroad upon great Koonak;
They climb his seaward flanks;
See how they shift and change;
Watch them here to the south;

.

How they mount his southern slopes;
Hiding him from the stormy sea;
Each lending beauty to the other.

In connection with *contrasts* in the poetry of *neighboring* tribes, one notices a striking uniformity in the poetic products

of widely separated tribes. Consider for example the two following Jeremiads, one from the Maya, of Central America, the other from the Iroquois of New York State. They represent to my mind a really lofty type of verse and they have very much the same atmosphere, in spite of the distance.

From Horatio Hale, *The Iroquois Book of Rites* (p. 192); an Onondaga hymn.

Woe! Woe!
Harken ye!
We are diminished!
Woe! Woe!
The cleared land has become a thicket.
Woe! Woe!
The clear places are deserted.
Woe!
They are in their graves—
Those who established it—
Woe!
The Great League.
Yet they declared
It should endure—
The great League.
Woe!
Their work has grown old.
Woe!
Thus we are become miserable.

From Brinton *Essays of an Americanist* (p. 303), a Maya "prophecy" (probably composed long after the fact).

Eat, eat, while there is bread.
Drink, drink, while there is water,
A day comes when dust shall darken the air
When a blight shall wither the land,
When a cloud shall arise,
When a mountain shall be lifted up,
When a strong man shall seize the city,
When ruin shall fall upon all things,
When the tender leaf shall be destroyed,
When eyes shall be closed in death;
When there shall be three signs on a tree
Father son and grandson hanging dead on the same tree;
When the battle flag shall be raised,
And the people scattered abroad in the forest.

It seems from the brief study here presented that a poetic map of North America will have some rather astonishing features.

It certainly will not be the ordinary cultural map, but a product with a somewhat different physiognomy. That a piece of work is waiting to be done is evident. There is available in print material from practically all parts of North America, and some material from scattered areas in Middle and South America, all of which is uneven, scattered, badly translated, difficult of access, imperfect in every sense, but still available. If no better qualified students undertake this work, the two writers of the present article herewith announce their intention.

TRANSCRIPTIONS OF INDIAN VERSE

Matthews in his *Night Chant* says (p. 269) a few things about the recording of primitive poetry from the lips of Indians which I think are worth reprinting.

"The task of recording these songs is not easy, and when they have been reduced to writing, the labor of translating them is not easy. . . . Our scholars differ as to the interpretation of many passages in Shakespeare. Recognizing these facts, it must not be supposed that the translations from an unwritten savage language which follow, are offered as perfect. But they are the result of long and careful study. . . . Many times the combined knowledge of all these have failed, and the author's own understanding of the etymology of the Navaho language obtained during a period of twenty years' study, had to supply the deficiencies.

"He simply offers the work as the best he can do. But here stand the texts. Perhaps when the present pagan cultus of the Navahoes is dead, when 'I want to be an angel' has supplanted 'Hyidžzná' in the worship of this people, some student of the language more skillful than the author may arise to interpret more correctly the spirit of these songs."

In spite of what Matthews said, which ought to make a meddler pause, some curious fatality pursues the little Indian poetry which has found its way into print. Few people seem to be able to touch it without tampering with it, much to its disadvantage. Worse than that, the authors who write on Indian poetry do not even indicate the extent to which their license goes.

Cronyn's book, for instance, is practically useless for any real lover of Indian verse. He garbles many poems without even a rudimentary sense of compunction and does not even indicate where the original versions may be found. His book contains no bibliography, or list of sources. His ideas about the origins of his material are often comical in the extreme. He fancies, for example, that the Incas inhabited the southwestern part of the United States (an idea so bland and child-like that there is a certain nobility about it). He imagines that the Ojibwa are a different group from the Chippewa, and he cannot even transcribe the names of tribes (to say nothing of their poetry) without deforming and skewing them, and giving us such a gem as "Kwatiutl" for Kwakiutl. His printed versions of native verse have for the most part little faithfulness to their originals.

Even a student like Wissler introduces a change (no doubt inadvertently) into the transcription of a song from the *Night Chant*. The original is as follows:

From W. Matthews *The Night Chant* (p. 143).

In Tse 'gihi,
 In the house made of dawn,
 In the house made of the evening twilight,
 In the house made of the dark cloud,
 In the house made of the he-rain,
 In the house made of the dark mist,
 In the house made of the she-rain,
 In the house made of pollen,
 In the house made of grasshoppers,
 Where the dark mist curtains the doorway,
 The path to which is on the rainbow,
 Where the zig-zag lightning stands high on top,
 Where the he-rain stands high on top,
 O male divinity!
 With your moccasins of dark cloud, come to us. . . .

In Wissler's version the word cloud is substituted in the sixth line for the Navaho word for "mist". The matter may seem a trifling one to mention, but the word "cloud" had been used just above, in a preceding verse, and the poetic effect was altered (impaired in fact) by the change. It is worth remarking also that we have

two "original" versions of this chant, one edited by Matthews himself in the *Night Chant*, the other printed under the supervision of Pliny Earle Goddard, in *Navaho Myths, Prayers, and Songs*. Poetically, they are very different things, though apparently, in origin, translations of the same original Navaho poem. This sort of thing is hard to explain to people outside of the ethnological fold. They get the impression that we people who record Indian texts and translate them, simply do not know what we are about. Wissler's transcription of this poem does not exactly correspond to either of the original versions.

There is a strong temptation for every investigator to "edit" any Indian poem he gets his hands on. The senior one of the authors now writing feels this impulse as strongly as anybody. The existence of the temptation is admitted. We all feel it. It ought however to be resisted. When it becomes overwhelmingly strong, the fact that alterations have been introduced ought to be clearly indicated.

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PEYOTE, THE GIVER OF VISIONS

BY RUTH SHONLE

I

WHEN THE Spanish fathers first walked among the Indians in Mexico, they were disturbed by the use which the Indians made in their ceremonies of a small plant, which the Spaniards thought was a dried mushroom. This plant has since been identified as peyote (*Lophophora williamsii*), a small spineless cactus indigenous to the lower valley of the Rio Grande, especially on the Mexican side.¹ When eaten in the fresh or dried state, this cactus causes a kind of intoxication and, more important to the Indians, color visions.² This mysterious and seemingly magical vision-giving power and the curative properties which peyote is believed to possess have made it the center of elaborate religious ceremonies. For many years—even centuries—these ceremonies were confined to tribes whose wanderings carried them through or near the peyote country. But since about 1890 the ceremonial use of peyote has spread among the Indians as far north as the Sioux and Chippewa and west to the Ute. The ceremony has been incorporated into the cycle of tribal ceremonies, in some cases even displacing them. The cult can no longer be disregarded in a study of significant tribal ceremonies, nor should the opportunity be foregone to discover the factors which have favored the recent diffusion and the extent to which an intrusive cult is modified in the process of its adoption.

The information upon which this study is based has been obtained from three sources: anthropological studies of specific

¹ Safford, *Narcotic Plants and Stimulants of the Ancient Americans*, p. 399. Safford, *An Aztec Narcotic*, pp. 299-300.

² "The physiological action of peyote may be divided into a preliminary stage and a stage of intoxication. In the preliminary stage there is excitement, a feeling of exhilaration, and a diminished power to perceive the sensation of movement, performances involving effort being hardly noticed. . . . The stage of intoxication is characterized by an inclination to lie down, although there is never a tendency to sleep." Newberne and Burke, *Peyote, an Abridged Compilation*, p. 20, quoting Dr. Walter E. Dixon.

tribes; correspondence with agents in charge of reservations; and correspondence with Indian peyote users. These sources have yielded a considerable mass of material, but even so there are uncertainties and gaps which can be filled only by increased attention to the peyote ceremonies on the part of those in the field.

II

The origin of the use of peyote by the Mexican Indians is lost in the past. Various writers record its use among the Aztec in the sixteenth century;³ the Chichimeca before 1569⁴; the Cora Indians as early as 1754⁵ and as recently as 1899⁶; the Huichol, Tepecano and Tepehuane in 1899⁷ and the Tarahumare⁸ for the same period. The Comanche and Kiowa were initiated into its use prior to 1891.⁹ The Mescalero and Tonkawan Indians are credited with being the intermediary agents between the Mexican Indians and the Comanche and Kiowa,¹⁰ but this link in the chain has become traditional and cannot be asserted with assurance. But it seems relatively certain that peyote was carried no further north than the Comanche and Kiowa until after 1890; nor does it seem to have ever been used by the Indians of the Southwest. The Oto Indians also received peyote from the Tonkawans, but at a later date (1893-96).¹¹ Of other tribes of the same region, Mooney is

"The production of visions is the most interesting of the physiological effects of peyote. The visions ranged from ill-defined flashes of color to most beautiful figures, forms, landscapes, dances—in fact, there seemed to be absolutely no limit to the variety of visions." *Ibid.*, p. 21, quoting Doctors D. W. Prentiss and Francis P. Morgan.

³ Safford, *Narcotic Plants and Stimulants of the Ancient Americans*, pp. 404-05, quoting Sahagun, *Hist. Nueva España*.

⁴ *Ibid.*, p. 399, quoting Sahagun.

⁵ *Ibid.*, p. 402, quoting Ortega, *Historia del Nayarit*.

⁶ Safford, *An Aztec Narcotic*, p. 305, from Diguët, *La Sierra du Nayarit et ses Indigènes*.

⁷ *Ibid.*

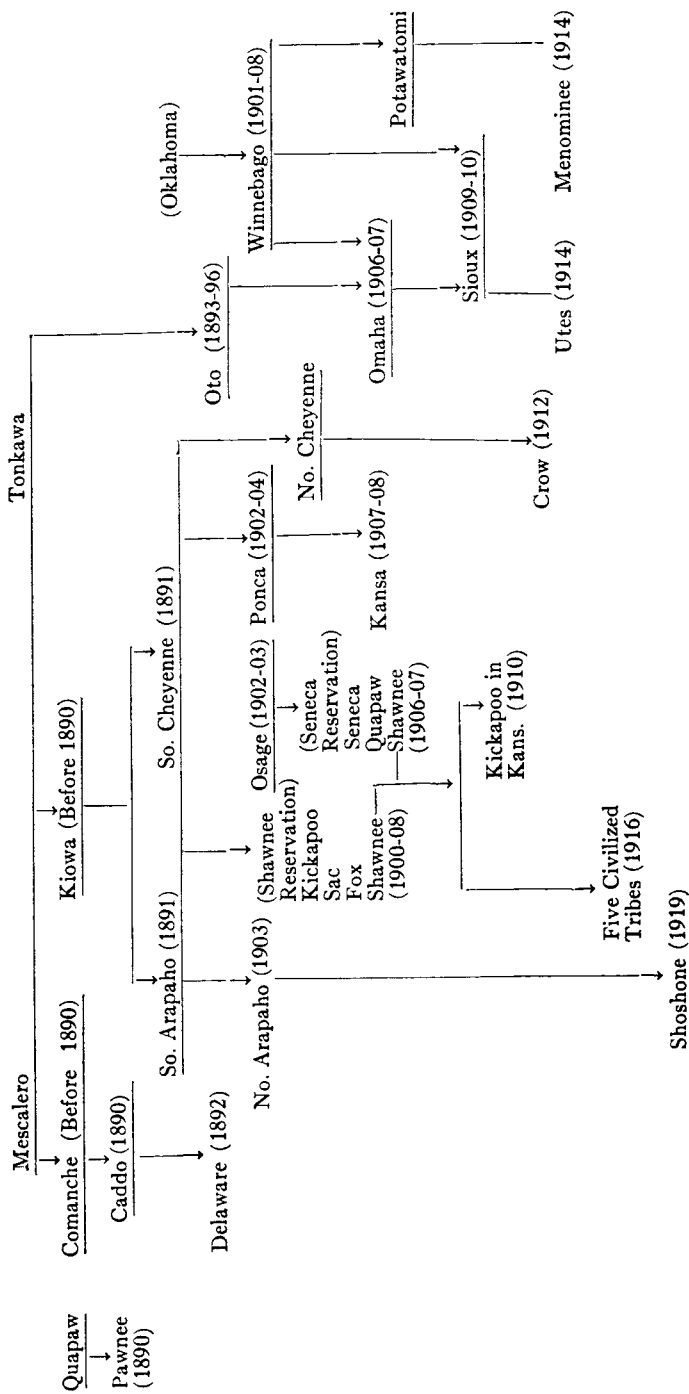
⁸ Lumholtz, *Unknown Mexico*, pp. 361 ff.

⁹ *Peyote*, Hearing before a subcommittee of the Committee on Indian Affairs, pp. 63, 70, quoting James Mooney.

¹⁰ *Ibid.*

¹¹ Information given by Richard Shunatona, Pawnee, Okla., and Charles Whitehorn, Red Rock, Okla.

DIFFUSION OF PEYOTE



reported as saying that "in 1890 the Caddo and Wichita were little acquainted with peyote, and only one man in the Arapaho knew anything about it," the same being true also of the Cheyenne.¹² But from this date on the spread was rapid. The Delaware learned the peyote ceremony from the Caddo in the years between 1890 and 1892,¹³ at the same time that the Quapaw passed their knowledge of it on to the Pawnee.¹⁴ By 1905 not only did most of the tribes on the reservations in Oklahoma have a group of peyote users, but the Northern Arapaho had begun to use it and a few years later the Winnebago and Omaha had learned the ceremony and transmitted it to the Sioux, who in their turn gave it to the Ute. A glance at the attached table and the map¹⁵ indicates that the Kiowa have been the main agents in disseminating the peyote cult, although the Winnebagos have been active and there is scarcely a tribe, except the most recent acquirers of the cult, which has not given the ceremony to some neighboring tribe. The connection with Mexican tribes has been completely lost, although the peyote plant still comes from that region, and the tribes now stationed in Oklahoma have become the center for diffusion of the cult through the North American tribes. How great the separation is from the Mexican tribes and how close the connection is between the Plains Tribes will come out more clearly in the discussion of the ceremonies used.

More important perhaps than the dates are the factors which have caused the recent spurt in the diffusion of peyote. In the four hundred years prior to 1890 that the Indians have been known to white men, and one can only guess at how many centuries before, peyote spread at most to only five or six tribes

¹² Peyote, Hearing before a subcommittee of the Committee on Indian Affairs, p. 71, quoting James Mooney.

¹³ Harrington, *Religion and Ceremonies of the Lenape*, p. 185.

¹⁴ Murie, *Pawnee Indian Societies*, p. 636.

¹⁵ The map shows (1) the number of reservations upon which peyote is used; (2) the percentage of Indians on each reservation using peyote (it should be noted that relative numbers of users from reservation to reservation are not shown, but that each reservation is used as an independent group-unit); (3) lines of diffusion. The data is based on reservations rather than on tribes because information was available for the former and not for the latter and because the diffusion of peyote is in part a reservation phenomenon.

north of the Rio Grande; in the thirty-four years since 1890 it has been carried to some thirty additional tribes. The segregation of Indians on reservations was perhaps the most important factor fostering diffusion. Reservation life broke up the competitive ranking of the tribes and realigned them as common participants in a new manner of living toward which they had little inclination. The breaking down of the old attitudes of unity of the tribe and of enmity toward other tribes was but part of a more complete cultural disorganization. The buffalo was gone; the wide stretches of free territory were gone; the social organization, slowly built up through generations to protect fundamental interests, no longer met crucial problems. Agricultural life and Christianity were the unfamiliar substitutes offered. Into this uncertain period of adjustment swept the Ghost Dance religion, engendered by the wish for the old security and distaste for the white man's civilization, and eagerly sought and accepted by one after another of the distraught Plains tribes. Fundamental in the philosophy of the Ghost Dance religion was the dictum of peace between the tribes—a philosophy the more readily accepted because of the common hardships of adjustment from a hunting to a sedentary life. The building up of intimate and friendly contacts was perhaps the most lasting effect of the Ghost Dance religion; its teaching of resignation was too far divorced from practical issues, its hope of relief too illusory to give lasting satisfaction. The dissemination of the peyote cult flowed easily along the newly opened channels of friendship. It came up from the south with the promise of great power; in its adaptability to new needs and a new stage of cultural life it was far superior to the tribal ceremonies, hampered as they were by age-old traditions; and it was Indian in origin, fitted to the Indian mode of thought.

Another factor which may be traced to reservation life is the provision of mechanical means of easy communication. Postal service and railway travel have increased contacts between tribes and made transportation of the peyote plant easy. The rapid diffusion of peyote, which grows only in a limited area, depended not only upon friendly relations but also upon easy means of transportation.

The exact lines of diffusion which the peyote cult followed are easy to account for. The far jump from the Arapaho and Cheyenne in Oklahoma to the Northern Arapaho and Cheyenne in Wyoming and Montana and the jump from the Sioux on the Yankton reservation to those on the Fort Totten reservation are due to intertribal visits of kinship groups. Proximity of tribes accounts for many cases. The spread throughout Oklahoma may be accounted for in this way. Here not only the plains tribes took over the cult but also tribes from other culture areas, as the Delaware. Other instances of the contacts of proximity are found in the Northern Cheyenne and the Crow, the Omaha and Winnebago, and the Potawatomi and Menominee. In addition to the contacts of kinship and proximity there are those resting upon friendship of long standing, as between the Sioux and the Ute. While there are instances of a peyote user from one tribe coming into another tribe and organizing the people (suggesting missionary effort) there are other cases in which visitors learned the ceremony from their hosts and carried it back to their own people. Marriage into the peyote family of another tribe has often led to conversion to the cult and its propagation.

While peyote seems to spread freely to the north there are apparently rather definite limits to its possible spread toward the west. The Indians in the states of Washington and Oregon are immersed in the Indian Shaker religion, a hybrid religion which in a sense parallels in development the peyote cult and stands in the nature of a competitor. It will no doubt prevent the spread of peyote toward the northwest. The Rocky Mountains act as a barrier to the tribes in Idaho and California. With one exception noted below, the tribes of the southwest have never been interested in peyote, probably because it did not fit into their seasonal division of ceremonies. The pueblo at Taos has thirty-three peyote users—a percentage of .4 for the Pueblo Reservation. It should be recalled that the southwest was also impregnable to the Ghost Dance religion. This brings the discussion to the question of why merely the Plains tribes should so eagerly adopt peyote—a question whose answer lies at least partially in the vision-giving power of the peyote.

MAP SHOWING USE OF PEYOTE IN THE UNITED STATES

Circles show location of Indian
reservations in western
United States (1919)

○ No peyote used

◐ Less than 25% of Indians
on reservation use peyote

◑ 25-49 % use peyote

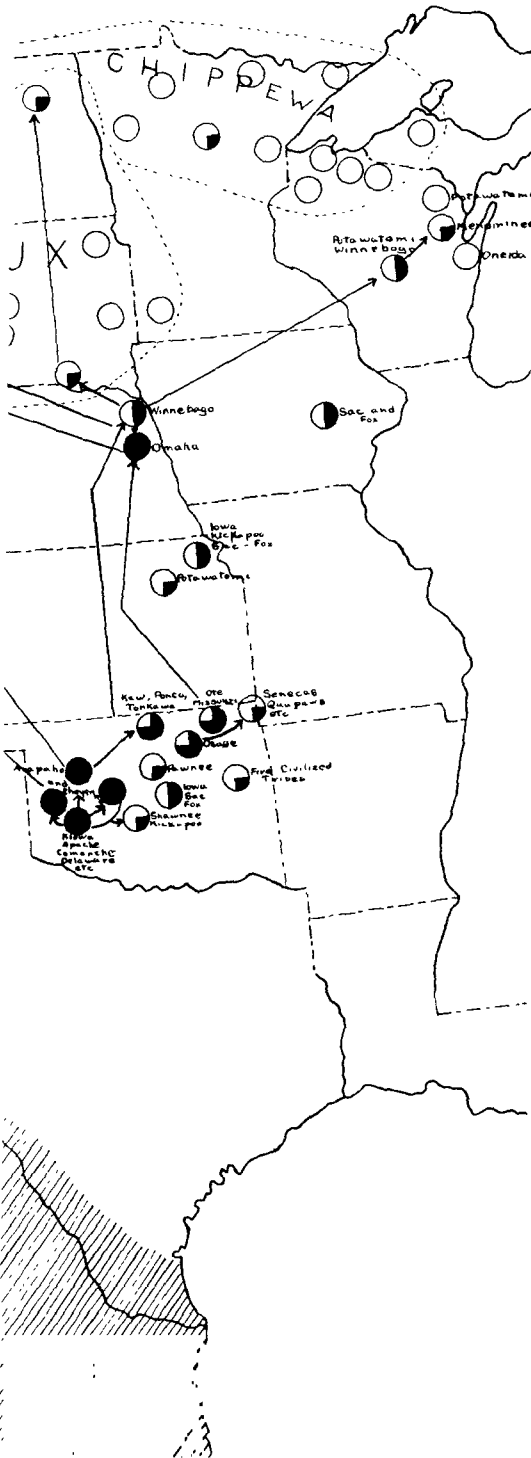
◒ 50-74 % use peyote

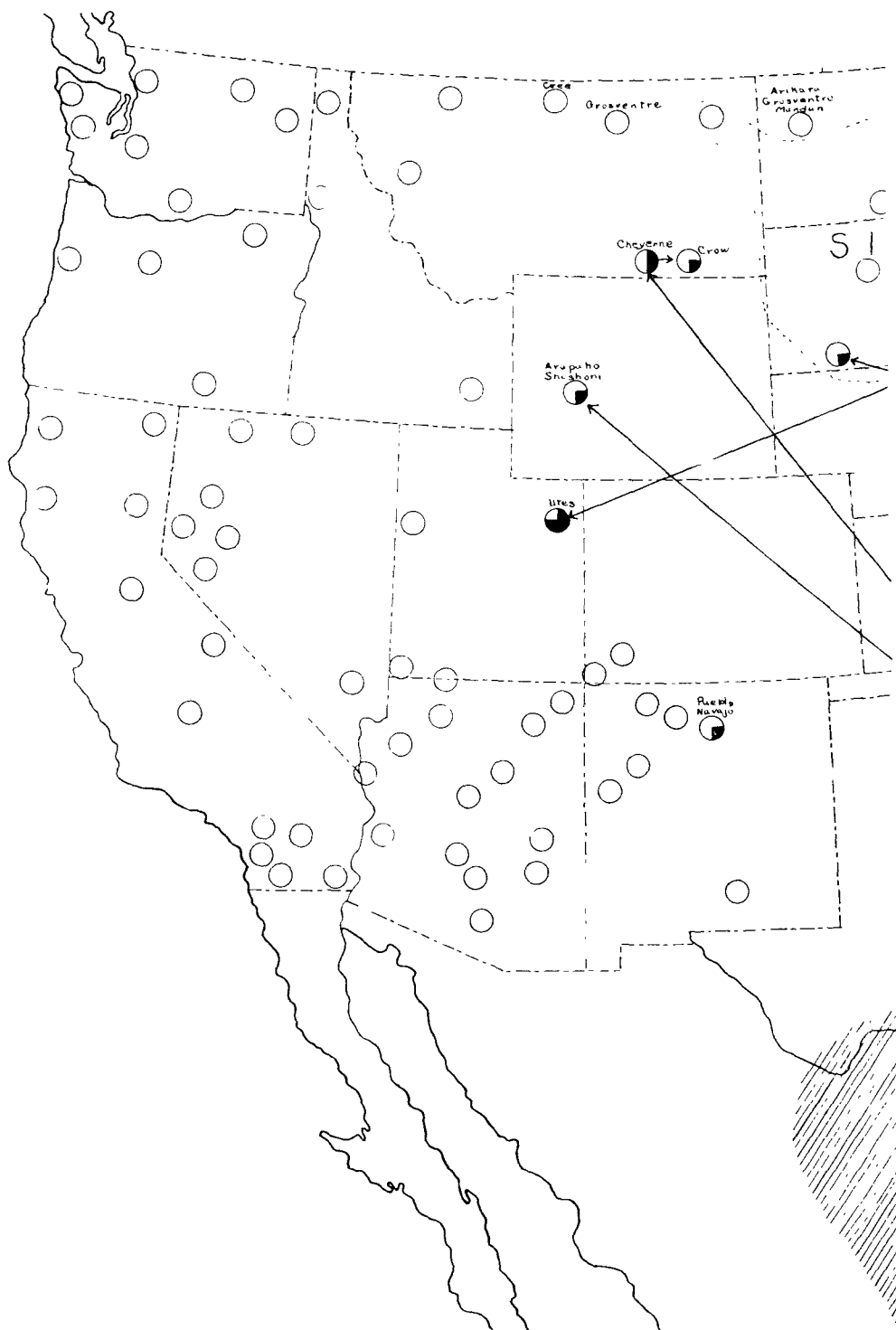
● 75-100% use peyote

→ Lines of diffusion

▨ Territory where peyote
grows

This map is based on information
contained in Newberne and Burne,
"Hyle, an Abridged Compilation" and
other sources





Visions, usually induced by fasting, have always had a place in the religion of North American Indians and are in no way confined to the plains area. But the Plains Indians made a distinctive use of visions. In other sections the vision was part of the puberty rite by which the youth gained his guardian spirit, but was rarely if ever sought upon other occasions. But on the plains the vision at puberty was but the first of many visions. Periods of mourning, desire for revenge, initiation into certain societies, the organization of a war party, called for visions of mature men. On the western plains the prevalence of visions has even contributed to the elimination of the shaman.¹⁶ Peyote did not have to win its way into a system of religion which was without visions. Rather it facilitated obtaining visions already sought. It was holy medicine given to the Indian that he might get into immediate touch with the supernatural without the long period of fasting.

Thus the underlying belief in the supernatural origin of visions is important among the factors contributing to the diffusion of peyote and in a general way defines the area of its probable spread. The period of its diffusion was determined by the possibility of easy means of communication and transportation plus the restless and almost despairing need for reorganization of religion to meet the needs of a new type of living. The cult has spread in lines which indicate contacts of a "primary" or intimate sort, often based on kinship or intermarriage, but not necessarily spatially close.

III

In speaking of the diffusion of a cult there is implied the spread not only of the material symbol but of the ritualistic complex as well. However, a comparison of the Mexican peyote ceremony with the typical Plains ceremony indicates a sharp break and raises questions as to the manner of diffusion.

The paucity of material available on the cult in Mexico makes it impossible to select a ceremony and call it typical for the Mexican tribes. The Tarahumare Indians, however, have ap-

¹⁶ See Benedict, *Vision in Plains Culture*. Conversation with Mr. Ralph Linton, Field Museum of Natural History, Chicago.

parently had their ceremony for many years; they are among the more northern tribes and hence may be considered to have the kind of ceremony most apt to spread north of the Rio Grande, and they have features in common with certain of the other Mexican tribes.¹⁷

The peyote ceremony of the Tarahumare¹⁸ is preluded by a ceremonial pilgrimage to the peyote country for the purpose of securing the plants. The chosen company before starting is purified with copal incense. Although several days are consumed in the journey to the peyote country the men eat nothing until they arrive, when they may eat only pinole. The first act upon arriving among the peyote is to erect a cross before which peyote are placed that they may tell where other peyote grow. Raw peyote plants are then eaten and further work is postponed until the following day, after the intoxication has worn off. Peyote are then gathered with a certain ritual and the company returns home, usually having spent several weeks or a month on the journey. Their return is hailed with songs and a sacrificial feast.

The peyote ceremony is held in connection with the other tribal dances, but not as an integral part of them. A special patio is cleared of rubbish and swept; logs are brought for the fire and arranged to lie in an east and west direction.¹⁹ Two or three women are appointed as assistants to the shaman who is to have charge of the ceremony; they grind the peyote on the metate before the ceremony, taking care not to lose any of the liquid or the water in which the metate is afterward washed. The dirty brown mixture which results is drunk at the dance.

When evening comes, the shaman seats himself west of the fire with a male assistant on either side and the women assistants to the north of the fire. A cross is placed to the east of the fire. On a symbol of the world a peyote plant is placed and covered

¹⁷ The Huichol, to the south of the Tarahumares, use the same name for peyote and have a ceremony similar to the Tarahumares. Lumholtz, *Unknown Mexico*, I, p. 357.

¹⁸ Based on Lumholtz, *Unknown Mexico*.

¹⁹ See attached sketch.

with a hollow gourd which is used by the shaman as a resonator for his rasping stick.

The order of the ceremony consists of singing by the shaman to the accompaniment of the rasping which continues through the night; offering of incense to the cross by assistants who kneel and cross themselves; dancing by the male assistants who wear white blankets and carry rattles of deer-hoofs (this dance follows a line contrary to the motion of the sun and occupies the space between the fire and the cross with a later extension to include the fire); dancing by the women assistants; drinking of the peyote by all who are in attendance. The only variation in the procedure comes at daybreak when the people gather near the cross for the healing service. This is accomplished not by the direct use of the peyote, which is, nevertheless, thought to have curative power, but by rasping against the person's head, the slight dust from the rasping being thought efficacious in producing health. After healing the people, the shaman rasps toward the rising sun to waft the peyote spirit home. The ceremony ends with this service and is followed by a feast.

The peyote dance is but a part of the ceremonial life of the Tarahumare. In other dances the open ground is also used, and the cross, white blankets, deer-hoof rattles, and symbolism of the east, are parts of the traditional dances. Apparently the only trace of modern innovation is found when the assistants kneel and cross themselves—the result of Catholic influence, according to Lumholtz.

In striking contrast to the Tarahumare ceremony is that which with slight variations prevails on the plains. The Arapaho ceremony²⁰ of about 1899 may be taken as typical of the pagan ceremony. This ceremony was derived from the Kiowa (for whose ceremony no complete description could be discovered) and was shared by the Cheyenne. It is then the ceremony from which many of the other tribes learned the ritual.

After preliminary preparation of the ground, a tipi is erected, facing the east.²¹ The wood for the fire is piled inside to the south

²⁰ Based on Kroeber, *The Arapaho*, p. 399 ff.

²¹ See attached sketch.

of the door. An altar in the shape of a crescent is constructed of earth around the fireplace in the center of the tent, with the horns toward the east. Sage is placed around the tipi for the men to sit on. In the course of the service there is used a drum made of skin stretched over an earthenware pot containing a little water, some ashes and three small pieces of pine-wood, and secured with the aid of seven glass marbles; a rattle made of a gourd containing small glass beads which give forth a swishing sound; an eagle wing-feather presented to the fire-tender when he is appointed; staff and eagle-feather fan held by the leader. The ceremony begins with the appointment of the fire-tender by the leader, who then conducts the company into the tipi. The first act of the leader is to take from a special purse or pouch a large peyote which he places on the middle of the crescent-shaped altar on top of eight short stems of sage placed to point to the cardinal directions and between. From the peyote a line is traced in the earth along the crescent, which marks the path of the worshippers' thoughts to the peyote. After this act the peyote, which has been soaked in water, is purified in cedar incense and eaten, in lots of four for each member. Sometimes the worshippers rub themselves with chewed sage before taking the peyote. The leader then sings four songs, using the rattle, and the man to his left drumming for him. Around the tipi the drum and rattle pass, each man singing four songs. There is no intermission until midnight when the woman present, who is usually the wife of the leader, goes out and returns with a jar of water which is placed before the leader who drinks and passes the jar on, each person being entitled to four swallows. Some ritual may accompany this part of the service, but its exact form apparently depends upon the leader. At dawn, the songs which have referred to the peyote, change in character and refer to the morning star. At sunrise the woman again leaves the tent, returning with four dishes of food which she places on the ground between the fire and the door. The singing is now at an end, the fire is allowed to die out, and the cover of the drum is loosened with certain symbolic acts with the marbles in order to ward off disease. After

eating, the men leave the tent and rest until noon when a meal is served.

The Arapaho ceremony may be compared, step by step, with that of the Tarahumare. The Arapaho have no ceremonial pilgrimage and there is apparently no ritual about obtaining the peyote. The ceremony is held in a tipi instead of in the open. The paraphernalia used consists of a drum, gourd rattle, staff, eagle-feather fan, pouch for the peyote, head-dresses of yellow-hammer or woodpecker feathers, and wrist-bands instead of the rasping stick, deer-hoof rattles and white blankets of the Tarahumare. There is no dancing. The songs are sung by each member, in groups of four, instead of by the shaman alone. The peyote is eaten whole instead of being ground into a drink (the Arapaho use the dried peyote top, the Tarahumare the entire fresh plant). The Arapaho have a midnight ceremony for drinking water. Both tribes have a ceremony at dawn, but the ritual is very different. Both tribes have one sacred peyote, but the placing of this peyote is different. The Arapaho have an elaborate altar which is not found among the Tarahumare. To sum up, the two ceremonies are alike in scarcely any particular, except that each centers about the eating of peyote and the veneration of the plant, one specimen of which is exhibited during the ceremony.

The elements of the Tarahumare ceremony which are in harmony with other tribal dances have been pointed out. The Arapaho ceremony in its turn is in harmony with the Arapaho tribal dances. The tipi facing east is the usual ceremonial site; reverence for the morning star is common to all the prairie tribes; the all night ceremony frequently occurs; purification with cedar incense occurs in other ceremonies, and the drum, rattle and other objects are usually found. Variations from the usual patterns occur in the manner of decorating and in the color designs found on some of the objects²²; the crescent shaped altar has no prototype in other ceremonies; and some of the most

²² According to Mr. Linton, the beadwork on Arapaho peyote objects differs from the tribal pattern, but closely resembles the tribal pattern of the Kiowa, from whom the Arapaho learned the ceremony. This Kiowa character of beadwork holds for the peyote objects of many tribes, even among the Central Algonkins.

sacred tribal symbols, such as the pipe, are not used in connection with the peyote ceremony. But in general the peyote ceremony of the Arapaho is typical of their culture.

No information has been discovered regarding the type of ceremony used by the tribes between the Tarahumare and the Arapaho. In the absence of such information it seems that all that can be said is that the earliest Plains borrowers learned of the value of peyote in giving visions perhaps with the implication of supernatural power and constructed about it a ceremony which borrowed largely from the tribal ceremonies for its various elements. Certainly the ceremony of the Tarahumare, foreign in all respects to the Plains culture, was not adopted.

The Arapaho may be taken as the pattern for the Plains tribes. More or less adequate descriptions are available for the ceremony among the Kiowa,²³ Delaware,²⁴ Iowa,²⁵ Pawnee,²⁶ and Winnebago.²⁷ All use a tipi, except the Winnebago, who use a house or the open.²⁸ All use a fire and the Delaware and Iowa use a crescent of earth,²⁹ the Pawnee an altar the shape of which is not mentioned (probably the crescent), and the Winnebago a horseshoe shaped altar (also probably the crescent). The description for the Kiowa is very incomplete and the altar is not mentioned. The Delaware and Iowa place the sacred peyote on the crescent, as do the Arapaho, while the Winnebago place two sacred peyote on a special mound of earth. A drum and rattle are used by all the tribes mentioned, and in addition for the Delaware, Iowa and Winnebago a staff and eagle-feather fan or ornament are mentioned. The general order of the service is observed by all, that is, prayer and perhaps a talk by the leader,

²³ Mooney, *Mescal Plant and Ceremony*.

²⁴ Harrington, *Religion and Ceremonies of the Lenape*, pp. 185-190.

²⁵ Skinner, *Iowa Societies*, pp. 725 ff.

²⁶ Murie, *Pawnee Indian Societies*, pp. 636-38.

²⁷ Radin, *Peyote Cult of the Winnebago*. Radin, *The Winnebago Tribe*, pp. 328-426.

²⁸ The ceremonial building of the Winnebago was a lodge, the tipi being used only on the hunt.

²⁹ The earth crescent is also mentioned for the following tribes in correspondence with reservation agents and Indian peyote users: Ponca and Oto.

songs in rotation, and eating of the peyote. The Winnebago confine the rotational singing to the leader and four assistants. A midnight ceremony is observed by the Kiowa, Iowa, Pawnee and Winnebago and the daylight service by the Kiowa, Iowa, Delaware, and Pawnee. The Delaware show perhaps the most complete case of borrowing. Of eastern origin, their native ceremonial lodge was the Big House, a rectangular structure of wood or bark. But when they borrowed the peyote cult from the Caddo they took it in its entirety and use the typical Plains tipi and the Plains type of peyote ceremony.

There are a number of minor variations, which fall into several types. First, are those due to adaptation to previous ideas of tribal dance ritual. Thus the Pawnee divide the tipi into the north and south halves as with their other dances. The Winnebago have added a mound similar to the one used in the buffalo dance, and a cross traced in the earth. The Delaware also use a mound near the door of the tipi representing the sun and a cross to the west of the crescent. There seems, however, to be no connection between the occurrence of these two added elements in the two tribes. Symbolic lines also differ from tribe to tribe and the symbolic meaning of various parts of the paraphernalia differs.

The second class of variations are those due to the introduction of Christianity. The ceremony described for the Arapaho for 1899 had no discernible elements of Christianity, although Kroeber says that "it contains many Christian ideas, but they are so incorporated that fundamentally the worship is not dependent on Christianity."³⁰ The ceremony as used by the Arapaho in 1912,³¹ while similar to the older ceremony in its main outline, has changed somewhat in details and greatly in its symbolic meaning. Thus four lines intersecting at one point are drawn before the erection of the tipi, dividing the ground space into eight sections and symbolizing a peyote. A flute and an otter-skin cap have been added to the paraphernalia. The fire "is supposed to represent light, just as God said, 'Let there be light'." "The

³⁰ Kroeber, *The Arapaho*, p. 398.

³¹ Description and quotations from Radin, *The Winnebago Tribe*, pp. 415-19.

reason for drinking water at midnight is because Christ was born at midnight and because of the good tidings that he brought to the earth, for water is one of the best things in life and Christ is the saviour of mankind." A little later, the leader leaves the tipi and blows the flute to the four directions, "to announce the birth of Christ to all the world." At daybreak the flute is again used, this time to represent the trumpet which is to be blown on the Day of Judgment, when Christ will appear in his crown, which is represented by the otter-skin cap. The leader represents the first created man, his woman assistant the New Jerusalem. The corn eaten in the early morning represents the feast to take place at the Day of Judgment and the fruit stands for the fruit of the tree of life; the meat is the message of Christ and those who eat it are saved.

Among the Winnebago,³² the mound, which Radin regards as originating in the mound of the buffalo dance, has become Mount Sinai; the staff, used in other tribal dances, is the shepherd's crook; the crossed lines have become the crucifix.

In other instances the entrance of Christianity into the ceremony has done more than change the symbolism. The Iowa and Winnebago both use the Bible as a sacred object, placing it near the sacred peyote, and include in the service Bible reading, sermons, confessionals and prayers as well as songs with a Christian flavor. In fact, the Iowa ceremony as reported by Skinner bears some resemblance to a revival meeting. After the initial eating of the peyote and a round of singing, while incense is burned on the fire, the leader reads the Bible and preaches and then calls upon the members to confess their sins and repent, in response to which the members rise and testify that they have given up such habits as drinking, smoking or chewing, ending each confession with the words, "And all this Jesus has done for me." There are then sermons from visiting leaders and the Bible is again read and the members urged to confess and repent. Indeed, so far has this imitating of the Christian Church gone, that in several places the peyote worshippers have organized and even

³² Radin, *Peyote Cult of the Winnebago*, p. 21.

incorporated, after the manner of Christian Churches; thus in Oklahoma the peyote users are organized into the Native American Church.

Many of the variations are due to the fragmentary way in which the ritual comes to a tribe, a little from one source, a little from another, with perhaps additions from an ingenious leader. Thus among the Pawnee,³³ two young men visited the Quapaw in 1890 and brought back to their own tribe some of the peyote which they attempted to use in a ceremony, although they knew little of the ritual. Later, a visiting Arapaho taught the Pawnee the ritual which his tribesmen used. A few years after this, a member while intoxicated with the drug, had revealed to him a new ritual and songs, Christian in character, since in his visions he saw and talked with Christ. Under the leadership of this man certain minor changes were made in the form of the rattle and the drum, but in general the tipi arrangement and the order of ceremony of the Arapaho were retained. The Winnebago ceremony³⁴ also represents a series of influences. John Rave visited among the peyote users of Oklahoma, ate the peyote and was impressed with its curative power as well as the visions. Upon his return he induced his wife and near friends to use peyote for medicinal purposes. Gradually a ceremony only partially based on the Oklahoma type was put into use, but without any Christian elements. The use of the Bible and Christianized peyote songs and the reinterpretation of old customs as Christian symbols were introduced by Albert Hensley, who brought the new ideas from Oklahoma. Instead of a direct line of influence from tribe to tribe the picture presented is that of a network of lines, crossing and meeting again and again, carrying the same general ideas but permitting much individual variation in the matter of details.

The study of the peyote ceremonies as used in Mexico and on the plains indicates perhaps one limitation to the diffusion of a ritualistic complex. In Mexico the peyote ceremony is part of a larger culture complex. The peyote myth is coordinated

³³ Murie, *Pawnee Indian Societies*, pp. 636-38.

³⁴ Radin, *Peyote Cult of the Winnebago*, pp. 8-10.

with other tribal myths and the ceremony is one of a series,³⁵ and upon its performance rests the success of the tribe in many undertakings having to do with procuring food. The Plains culture complex was radically different from that of Mexico and it was apparently not possible for one ceremony from the Mexican complex to be lifted in its entirety over into the Plains culture. Hence when the peyote plant reached the Plains tribes, it came without the ceremonial ritual and another ritual was developed about it, based on the native Plains culture complex but not an integral part of it. The peyote ceremony has even stood somewhat in opposition to the native culture, especially after Christian elements were added. It is much more in a state of flux than the older ceremonies and changes in ritual and symbolism easily occur.

From the new peyote center which developed in Oklahoma, a certain complex of ritualistic elements has gone forth and been adopted even by tribes not of plains culture. These associated elements are the selection of night as the time for the ceremony, the use of the tipi, the crescent shaped altar of earth, the exhibition of a sacred peyote, singing songs in rotation to the drum and rattle, usually in groups of four songs, eating the peyote, the midnight water-drinking ceremony, the daily songs followed by light food and the feast later in the day. Certain minor features such as the method of preparing the peyote, use of symbolic lines, sacred mounds, and extra paraphernalia and the exact number of officials, vary from tribe to tribe, from leader to leader.

The use of the Bible and the Christian interpretation of ancient symbols represents a second accretion, and usually entails no serious change in the ritual. The prayers once made to the Indian spirits are redirected to the Christian God. The Bible is

³⁵ This integration is shown very clearly for the Huichol Indians. Deer and corn are their principal food stuffs and water is of extreme importance for their agriculture. In their myths the first peyote sprang from the tracks of a deer, which afterwards became a big peyote plant; the corn in turn originated from the peyote. Each year the peyote must be secured for a ceremony, which can occur only after a certain number of deer have been killed and the fields cleared and made ready for the harvest of the coming year. If the peyote were not brought the god of fire would be offended and there would be no rain for the corn, nor would they be able to catch deer. Lumholtz, *Symbolism of the Huichol Indians* pp. 17-18, 22-23.

added and Bible reading introduced. The talks become sermons. The songs are patterned after Christian hymns.

The peyote cult as it now exists in many of the Plains tribes represents the union of three elements—the symbolism of peyote as found in Mexico, the adaptation of the Plains ritualistic complex, and the Christian interpretation.

IV

The story of peyote is not complete without a brief statement of the effect, psychological rather than physical, which peyote has on the Indian. The vision-giving power of peyote has already been mentioned but may be discussed with more detail. Lumholtz does not emphasize the visions in his accounts of the Tarahumare and Huichol, probably because these tribes obtain the fresh peyote which has a more stimulating effect than the dried peyote used by the more northern tribes and which has therefore caused the dance to be the central feature of the ceremony rather than the quiet meditation and visions. But wherever the dried peyote is used, the vision predominates.

Sahagun, who wrote of the Aztec in the sixteenth century, says that "black mushrooms" (dried peyote) were eaten at the feasts, after which some danced, some sang, and others sank into meditation.

"Some had visions that they were dying and shed tears, others imagined that some wild beast was devouring them; others that they were capturing prisoners in warfare; others that they were rich; others that they had many slaves. . . . After the intoxication of the mushrooms had passed off they conversed with one another about the visions which they had seen."³⁶

All over the plains where the dried peyote is used, the Indians delight in the peyote visions and respond to their thrill, even when the dreams are terrifying in character. The visions reported from tribe to tribe seem to imply that a certain amount of unconscious control may be exerted over the type of vision, dependent upon the picture which the Indian expects to see. The

³⁶ Quoted by Safford, *Narcotic Plants and Stimulants of the Ancient Americans*, pp. 404-05.

following description is of the more grotesque, uncontrolled type of vision which came to a man on the first occasion upon which he ate peyote.

"After I had taken twelve beans of peyote I saw a mountain with roads leading to the top and people dressed in white going up these roads. I got very dizzy, and I began to see all kinds of colors, and arrows began to fly all around me. . . . I began to hear voices, just like they were all over the ceiling, and I looked around in the other room and thought I heard women singing in there; but the women were not allowed to sing in the meetings usually, and so this was kind of strange. After eating thirty-six of these peyote I got just like drunk. . . . I began to see a big bunch of snakes crawling all around in front of me, and it was a feeling like as if I was cold came over me. The treasurer of the Sacred Peyote Society was sitting near me, and I asked him if he heard young kittens. It sounded as if they were right close to me; and then I sat still for a long time and I saw a big black cat coming toward me, and I felt him just like a tiger walking up on my legs toward me; and when I felt his claws I jumped back and kind of made a sound as if I was afraid."³⁷

But seasoned peyote eaters who belong to the organized group and know how to control their visions have no such terrifying experiences. Gilmore relates one vision seen by an Omaha Indian which he seemingly correctly interprets as the result of expectant imagination and recent experience.

"He was an ordinary reservation Indian, who had had some schooling and had been in Washington and other eastern cities. On this occasion the opening reading from the Bible had been a story of the Hebrew prophet taken up to heaven in a chariot of fire. The Indian fell into a trancelike state and afterwards described his vision. He related that Jesus had come for him in an automobile and had taken him up to heaven, where he had seen God in His glory in a splendid city; and with God he had seen many of the great men of all time, more than he could remember."³⁸

In understanding the establishment of this control over the visions which comes with constant use of the peyote, the experience of Rave³⁹ who introduced peyote to the Winnebago is significant. The first time he ate peyote he was frightened at the sensations produced; he felt as though "a live thing" had entered

³⁷ Daiker, *Liquor and Peyote a Menace to the Indian*, pp. 66-67, quoting affidavit from a peyote user.

³⁸ Gilmore, *Uses of Plants by the Indians of the Missouri River Region*, pp. 105-06.

³⁹ Radin, *The Winnebago Tribe*, pp. 390-91.

his body. He thought he had killed himself and would die before morning. The following night he again ate peyote and saw a big snake which threatened to swallow him. This snake had arms, legs and a long tail, spiked like a spear. He also saw a man with horns and claws, carrying a spear. He tried to dodge the spear, fearing death. At last he appealed to the peyote—"Help me, O medicine, help me! It is you who are doing this and you are holy!" His suffering at once stopped. The following night he again ate peyote and saw a vision of God, to whom he prayed and appealed for knowledge of the peyote religion. Following this he saw the morning star, his home and children.

In the course of the repeated eating and no doubt some instruction from his companions (although he does not mention this) the peyote became defined for Rave. Instead of an unknown power which dominated him he came to think of it as a "holy medicine"—a type of thing with which he had had past experience. The instant he accepted the peyote as holy medicine and prayed to it as he had been accustomed to pray to other forms of tribal medicine, his fear left him and his visions changed from those of fear to those associated with familiar medicines. This process which seemed like the influence of supernatural power to Rave consisted in his identifying the peyote with a familiar phenomenon toward which he knew how to act and from which he expected a certain response, which he at once received in the feeling of peace and self-confidence which came to him. The members of the peyote societies customarily see God, Jesus, or Heaven with perhaps some scenes from their past misdeeds. The terrifying visions of the novices are interpreted as the result of an unrepentant spirit, acceptance of the peyote as holy being in the nature of a conversion (reorganization of attitudes toward it) which carries with it pleasant visions.

Due to the vividness with which the peyote vision portrays things and the ease with which Christian and pagan elements can be combined in it, peyote is regarded as the means of interpreting the Bible. It has been identified with the Holy Ghost and thus becomes one of the Trinity and through it the Bible becomes

clear to the Indian, that is, through the visions the Biblical teachings are applied to the Indians' individual problems.

The curative power of the peyote has also made a strong appeal to the Indian. According to Radin the curative power was the primary appeal in the dissemination of the cult. Speaking of the Winnebago, he says "The first and foremost virtue predicated by Rave for the peyote was its curative power. He gives a number of instances in which hopeless venereal diseases and consumption were cured by its use; and this to the present day is the first thing one hears about. In the early days of the peyote cult it appears that Rave relied principally for new converts upon the knowledge of this great curative virtue of the peyote. The main point apparently was to induce people to try it, and I hardly believe that any amount of preaching of its direct effects, such as the hyper-stimulation induced, the glorious visions, and the feeling of relaxation following, would ever have induced prominent members of the medicine bands to do so. For that reason, it is highly significant that all the older members of the peyote speak of the diseases of which it cured them. Along this line lay unquestionably its appeal for the first converts."⁴⁰

While the foregoing discussion brings together some of the scattered material on the peyote cult, it serves also to indicate the lack of information on many aspects of the study. Radin⁴¹ has suggested the desirability of collecting accounts of peyote visions to determine whether they tend to conform to certain types among the different tribes. A collection of peyote songs would be of similar value and might also be a good index of the influence of Christianity, since in some cases the peyote songs are based on Christian hymns. Some of the Plains tribes have peyote myths; a study of their origin and diffusion would be significant. Accounts of the peyote ceremony are available for only a few tribes; not until the ritual of many more tribes is made known can the complete story be told of the diffusion of peyote. Accounts of the ritual are all the more important since the adoption of peyote by

⁴⁰ Radin, *Peyote Cult of the Winnebago*, p. 12.

⁴¹ *Ibid.*, p. 20.

the Central Algonkin tribes, since there is here an opportunity for further modification of the ritual to conform to the Eastern Woodland culture complex.

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PETROGLYPHS NEAR THE DALLES OF THE COLUMBIA RIVER

BY WILLIAM DUNCAN STRONG AND W. EGBERT SCHENCK

IN THE COURSE of an archaeological reconnaissance of the lower Columbia River region carried on during August and September, 1924, a number of interesting rock drawings were found across the river from the town of The Dalles. The survey was carried out by the Department of Anthropology of the University of California and was made possible through the generosity of Mr. Henry J. Biddle of Vancouver, Washington. The reconnaissance was made by the authors, assisted by Mr. Biddle, who spent considerable time in the field. While making excavations on the north bank of the Columbia, a high water channel of the river was noted with a type of petroglyph unique in the region, presenting the aspect of an aboriginal natural history gallery. Both the intrusive type of rock carving and the fact that some of the animals depicted were probably never common in this immediate area seem to make the find worthy of record. The photographs here reproduced were made by Mr. B. C. Markham, a photographer at The Dalles, who visited the site with us and secured a fine series of pictures. The figures are carefully redrawn from field sketches by Mr. Strong.

These petroglyphs are located on the Washington bank of the Columbia, about one mile north from Spedis Station, on the Seattle, Portland, and Spokane railroad, or at the 99.5 mile point from Portland, Oregon, on the same line. They are across the river from the town of The Dalles, Oregon, and about seven miles north of it. The country here is rough and volcanic in nature and the high water channel where the carvings are located lies at the northeastern edge of a small valley. A double-stepped escarpment of basalt, perhaps 1500 feet high, stretches from the river bank south and west around the Spedis plain and back again to the river's edge. The Columbia from here north is marked by these palisade-like ramparts of the basalt rim rock.

At the point mentioned, between the railroad and the river, and roughly parallel to the river's course, is a channel through a projection of the basalt rim which is filled by the river only at extreme high water. The channel is about a quarter of a mile in length, with an east wall some twenty feet high, and a west wall of forty feet. The bed is lower at the upstream or northern end and averages about twenty-five feet above low water in the main channel. The entire western wall of this canyon is decorated with carvings. None appear on the opposite side which at high water is submerged. In all cases the pictures appear in places still accessible and all are from five to fifteen feet above the line marking high water which is twenty feet from the canyon floor. The lowest carving must stand about fifty feet above low water in the main river. The discrepancy between these levels shows the great seasonal fluctuation of the Columbia, which at the time of our visit was quite low, extreme low water occurring in October. On the top of a point between the petroglyph canyon and the river we found several flint artifacts, and in a sheltered hollow at the highest point of this high-water island was a large mortar and a pestle of gray basalt.

Petroglyph Canyon, as we named the place for the sake of convenience, being below the railroad is in a decidedly isolated and inconspicuous location. The north bank of the Columbia is largely rim rock and moving sand dunes, and beyond the Wishram Indian village of Spedis there is no road. Accordingly no people save the Indians who fish at the Dalles, live in the vicinity; and except by the local Indians, the existence of the canyon appears to be unknown, although during the period of railroad construction it must have been visited.

There is only one pictograph in this canyon, the rest of the pictures are petroglyphs, which are not common in the Dalles region, although a great number and variety of colored pictographs are to be found there. The petroglyphs do not appear to be all of the same age for some are quite evidently superimposed over others. An example of this appears (fig. 1h) where the recent figure of a man has been placed over the older figure of a goat. In other cases slabs of the basalt have broken off leaving only half

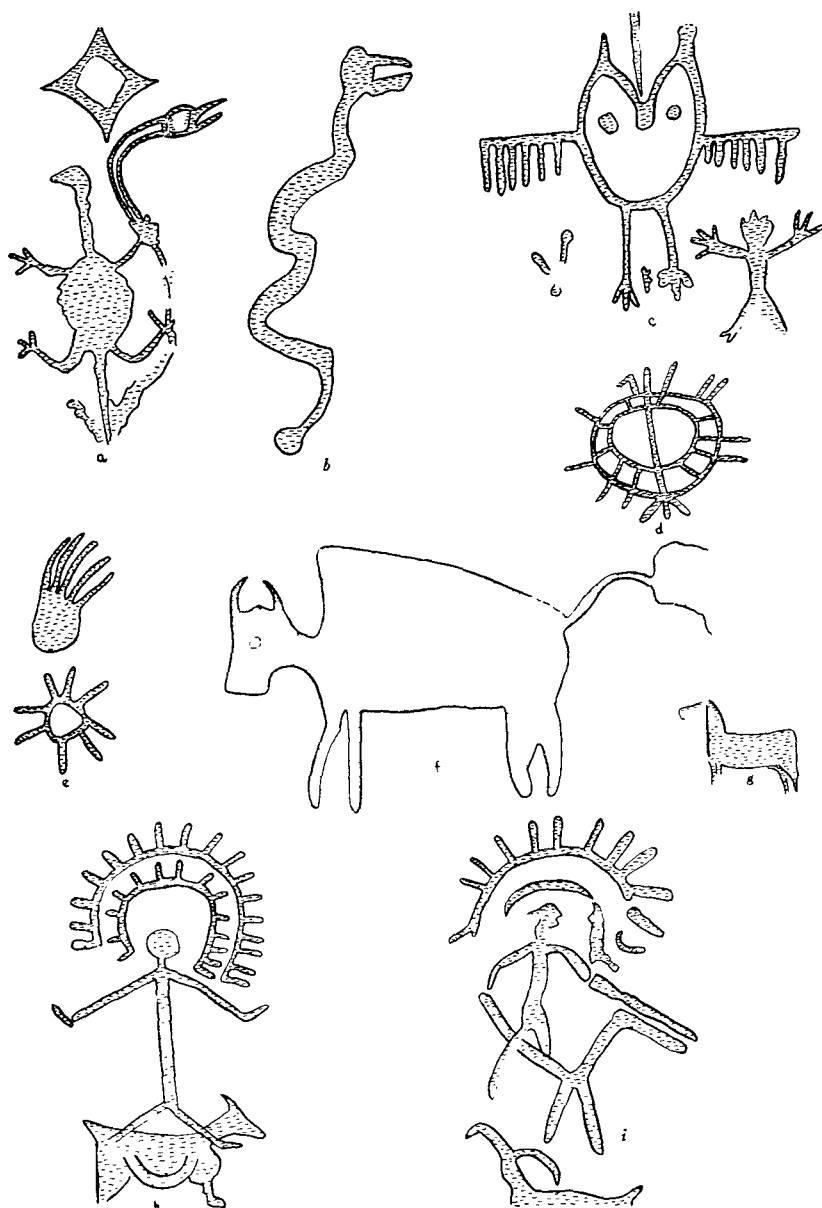


Fig. 1. Drawings of petroglyphs on the Columbia River near the Dalles, Spedis, Washington. (Not drawn to scale.) a, "Water animal," length from top of head to end of tail, 21 inches; b, Rattlesnake; c, "Water animal," from tip to tip of wings, 22 inches; d, Conventional design or possibly a "water animal"; e, Conventional designs, star (?) and comet (?); f, Buffalo, the only pictograph in the canyon; g, Horse (?); h, Man with head-dress (?) drawn partly over an older figure of a goat. Man's legs are definitely cut through goat design; i, Man with head-dress (?) on horseback.

a figure or design, and on the new surface thus exposed a later design has been worked. The older drawings are too obscure, however, to allow any temporal distinctions of type being made.

On the ledge underneath one of the largest figures (pl. 1d) we found one of the rock tools used in making the pictures. It was a small, irregular boulder of hard green stone naturally conforming at one end to the grip of a hand and worn down at the more pointed end. A little experimentation showed that these pictures were not pecked into the rock but were ground out by constant rubbing which was carried on until the dark surface of the basalt was entirely removed and a gray solid body for the design formed. The deepest designs were about one quarter of an inch in depth; the others usually less. The lines of the figures were usually simple and broad, and solid bodies were usually given the animals. Hence the designs are still clear. The spirited and realistic nature of the drawings is most impressive, especially in comparison with the usual pictographic type of the vicinity which is vague, conventional and meaningless to the modern observer.

The objects depicted in this canyon fall roughly into four classes.

The first class includes anthropomorphic or definitely human figures, as for example two human figures with head decorations (fig. 1h, i). Many interpretations are possible for the semicircle with rays extending from it in this design. Most probably it is the war bonnet or headdress of the man, but it may be a depiction of the sun. Decorative headdresses of this sort are very widespread in pictographic art, and are also on record from this region in ornamental carving.¹ The lower left hand figure appears superimposed on the earlier carving of a goat, for both legs are definitely carved over the goat design. The right hand figure apparently represents a man on horseback, holding a heavy bridle with his left arm. Here one leg is carved through the body of the "horse" the other showing on the other side only so far as it might be observed. Other human figures are crude linear carvings, usually

¹ H. I. Smith, *The Archaeology of the Yakima Valley*, *Anthr. Papers Amer. Mus. N. H.*, iv, 127-129, fig. 121.

of lines of the same thickness for legs and body, with a round head. The arms are often raised but in only a few cases is the head decorated. Such faces are rather square (pl. 2c, lower left), with eyes, nose, and mouth roughly depicted, and straight lines radiating about an inch and a half from the top and sides. Several figures have both arms raised and fingers spread, as may be seen to the right of the main design (pl. 1a). While even these crude linear figures express action in their poses, they are never as well executed as the animalistic and symbolic designs with which they are associated.

The second class includes all the animal forms which can be surely identified. Excluding man, there are eight species which may be ascertained with considerable accuracy. In order of their relative frequency these are the mountain sheep, the elk, the mountain goat, the deer, the horse, the wolf or coyote, the buffalo, and the rattlesnake. Carvings of the same animals have been grouped in fig. 2.

The mountain sheep, now extinct in all this area, must once have been found near here, as the type locality of *Ovis californianus* was described by David Douglas in 1829 "from Mount Adams," Yakima County, Washington. Moreover in Wishram and Wasco tales the animal is frequently mentioned and in the same casual manner as other game animals.² In such stories the identity is beyond question since the alternate name of "big-horn" is sometimes used. Lewis and Clark mention the mountain sheep repeatedly to the east, that is around the headwaters of the Missouri River, but in their account of the mammals seen along the Columbia they particularly describe the mountain goat³ and neglect the mountain sheep. The mountain sheep was undoubtedly more common east of this area. There can be no reasonable doubt, however, that it is the mountain sheep which is depicted in so many cases (fig. 2e, f, g, h, i, j, k, l, and m), for the great curving horns, the square solid body, and the poses (fig. 2k) of the animals are self-evident. The artists who drew these would certainly

² Edward Sapir, Wishram Texts, Publ. Amer. Ethn. Soc., II, 143, 153, 242, 262, 269, 279, 305, 1909.

³ Elliot Coues, The History of the Lewis and Clark Expedition, III, 850, 1893.

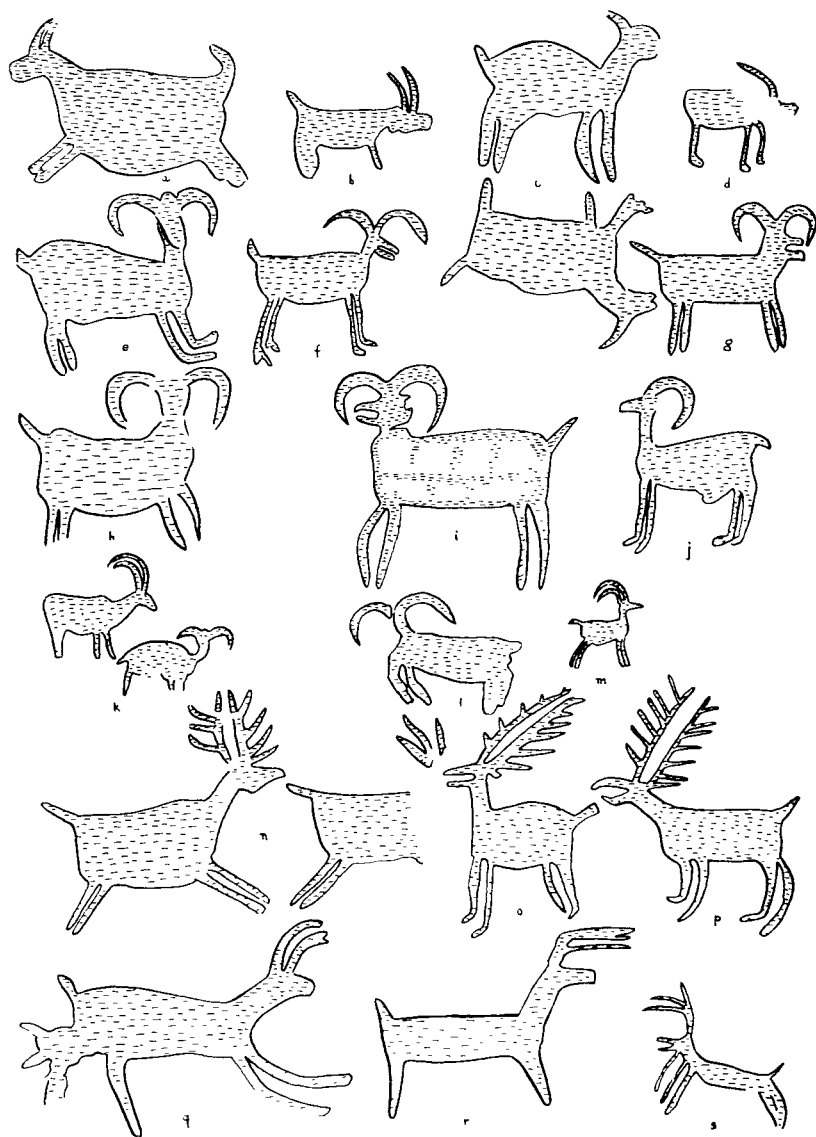


Fig. 2. Drawings of petroglyphs on the Columbia River near the Dalles, Spedis, Washington. (All not drawn to same scale) a, b, c, d. Mountain goats, width of body of a is $3\frac{1}{2}$ inches, e-m, inc. Mountain sheep; n, o, p. Elk; q, r, s. Deer.

seem to have had a very close acquaintance with the animal in question, and not merely hearsay knowledge.

The elk (*Cervus canadensis*) is also very clearly pictured (fig. 2n, o, p and pl. 1d, pl. 2a). The great, many-tined antlers are the main characterization and in all cases these horns, when shown with many tines branching from the main antler, are straight and not curved forward as is the case in the deer depicted (fig. 2q, r, s). The range of the elk was very wide west of the main chain of the Rockies and even now there are small bands in the Cascades and neighboring mountains.

The top row and the inverted figure in the second row (fig. 2, a, b, c, d) appear to be drawings of the mountain goat; the short rather straight horns mark them off from the more frequently depicted mountain sheep. As in the mountain sheep drawings a comparatively long tail is shown, which is of course an inaccuracy due either to forgetfulness or convention. Wishram Indians at Spedis, however, made the distinction between the two species at once, and the old men stated that the mountain goat was once found near the Dalles but was now found no closer than Mount Adams about forty-five miles to the north. The type locality of the subspecies, *Oreamnos montanus montanus*, is "the Cascade Range near the Columbia River in Oregon or Washington,"⁴ so there seems to be no reason why local Indians might not have depicted the goat.

The deer is not very often represented, but there are three examples (fig. 2q, r, s). The forward bend of the antlers over the brow, and the great forks of the horns instead of smaller tines, seem to establish their identity. The ranges of the various deer species overlap near the Dalles. Along the river from the vicinity of the Cascades west, are to be found forms of the black-tailed deer (*Odocoileus columbianus*) and the white-tailed deer (*Odocoileus virginianus*). The mule deer (*Odocoileus hemionus*) also occurs in the region of the Dalles, but as a general rule east of the Cascades. The petroglyphs, by their delineation of bifurcated

⁴ Gerrit S. Miller, List of North American Recent Mammals, U. S. Nat. Mus. Bull. 120, p. 498, 1923.



a



b



c



d

PLATE I

Petroglyphs on the Columbia River near the Dalles, Speds, Washington. a, "Water animal" (Tip to tip of wings, 22 inches; b, "Animals" (at upper left), "water animals" (center), and human figures (lower right). Point to point of ears of the central, cat-faced figure, 14 inches; c, "Water animal" (head to end of tail, 21 inches), and conventional design; d, Mountain goat (upper left), mountain sheep (upper center), elk (left and right), turtle-like "water animal" (?) or a conventional design (lower center).

horns, (fig. 2r, s) suggest the mule deer;⁵ but, with their evident grasp of salient features, it seems probable that the native artists would have depicted the large ears which characterize the mule deer, but which are not indicated in the representation. That these figures represent deer seemed probable to the authors, but two vertebrate zoologists of wide field experience when shown the sketches, at once suggested the antelope (*Antilocapra americana*). The western border of the antelope's range comes very close to the Columbia east of the Cascade Mountains, and it would be perfectly possible that this was the species depicted, especially (fig. 2q) if the people who drew the pictures were from the Great Basin area. To press the identification of three such indistinct representations farther seems unjustified.

The horse is perhaps twice represented, once in the case of the mounted man (fig. 1i) where the head, neck, body and two forelegs of the horse are suggested; and again in the small figure (fig. 1g) where a single horse is suggested graphically but not entirely conclusively. The style reminds one of certain plains designs but definite analogues are not at hand to clinch the matter. The main significance of finding the horse depicted among the other animals in this place, lies in the lesser antiquity thereby implied, for the horse only preceded the Caucasian in the region by a short space of time. On the whole there is little about the petrogllyph to suggest any very great antiquity, and while the appearance of two horse figures and the man over the goat (fig. 1h, lower left), are somewhat fresher, and appear somewhat later than most of the animals, there really seems no reason to give the latter more than a short priority.

In connection with the wolf or coyote there is little to be said. The smaller animal to the left of the mountain sheep (pl. 2b), would appear to be a predatory animal of this nature, the long bushy tail, rounded ears and open mouth suggesting a wolf or coyote, and the grouping would seem to indicate pursuit. It is not as definite a delineation as the sheep, but granting some artistic license is a good imitation of such an episode. The apparent

⁵ Elliot Coues. The History of the Lewis and Clark Expedition, III, p. 845, 1893, 43.

indifference of the sheep might well be accounted for by the smaller size of the pursuer, in which case a coyote and not a timber wolf would seem to be represented by the latter.

The rattlesnake is also only once represented (fig. 1b) by a reptilian body, characterized as a rattlesnake because of the ball or button on the end of its tail.

As before mentioned, there is only one pictograph in the entire canyon. This is painted in dull, rusty red on the highest rock of the west wall, in close proximity but above the neighboring petroglyphs. The subject (fig. 1f) is clearly the American bison or buffalo, the head, horns and tail establishing the identification. The very decided hump precludes the possibility of its being the domestic ox of later times. In summing up the evidence obtained from J. A. Allen,⁶ and the early explorers, A. B. Lewis says,⁷ "The buffalo did not penetrate far into the mountains, but they were common in southern Idaho in the Shoshoni country The buffalo occasionally ranged as far west as eastern Oregon in the Snake country but do not seem to have reached the Columbia Valley, though it is possible that a few stragglers found their way into the upper Columbia by way of the northern passes." At the time of Lewis and Clark's visit, the Nez Percé considerably to the north and east, seem to have been largely out of the buffalo range for they were forced to trade for buffalo robes on the Missouri,⁸ whereas the Shoshoni farther south seem to have been more influenced by the presence of this great food animal characteristic of the plains to the east. Thus the probabilities are against this picture of the buffalo having been drawn by any Indian living at, or to the northwest of the Dalles, and the work was most likely done by some member of a more easterly band. While a different technique separates this painting from the other petroglyphs, the style and spirit of the drawing is very similar to them and quite different from any other local styles. The probability of the close association of the artist of the buffalo picto-

⁶ J. A. Allen, *The American Bison Living and Extinct*, Mem. Mus. Comp. Zool. Harvard. iv, No. 10, 1876.

⁷ A. B. Lewis, *Tribes of the Columbia Valley and the Coast of Washington and Oregon*, Mem. Amer. Anthr. Assoc., Vol. 1, 183, 1906.

⁸ Elliot Coues, *The History of the Lewis and Clark Expedition*, II, 623, 1893.



a



b



c



d

PLATE II

Petroglyphs on the Columbia River near the Dalles, Spedis, Washington. a, Elk; b, Mountain sheep pursued by coyote (at lower left); c, Group of mountain sheep with human figures (at left); d, Mountain goat. Height of body, 3½ inches

graph with those of the other animal petroglyphs seems very strong.

The third category into which the petroglyphs fall, we have called "water animals," because they come under no natural classification and when the photographs and sketches were shown to the local Wishram Indians they so designated them. The association with the water is of course primarily mythologic, although certain of the figures do crudely resemble turtles (pl. 1c, d). The water animals are best shown in pl. 1c, d, and fig. 1a, d. The main deductions to be drawn from them would be stylistic were there more material on record with which to compare them. An owl-like figure, (pl. 1a, and fig. 1c), perhaps a variation of the thunderbird motif, as well as a cat-faced creature (pl. 1b), with many legs, whiskers, or water marks, are both very distinct designs. Definite analogues elsewhere may be revealed by more material. There may be close similarities to these on the lower Columbia but we saw none. The figure which appears as a turtle holding a bird's head (pl. 1c and fig. 1a) is likewise interesting and also appears to have symbolic significance which must remain uninterpreted. The "puffy-faced," owl-like mask above the main figure (pl. 1b) may represent the great horned owl (*Bubo virginianus*) or may be wholly mythologic. The interpretation of such designs except under unusual circumstances must be wholly subjective and is usually fruitless. While the work of Mallery⁹ is as yet the most comprehensive treatise of its kind, it is wholly inadequate to clearly mark out the stylistic affinities of petrographic art, and the need for a more detailed non-subjective study of this sort is great.

The fourth and last category is that of conventional designs. The curvilinear diamond (pl. 1c), above the turtle-like figure is one example. The star and comet-like figure (fig. 1e) are two others, similar forms of which are quite widespread. The turtle or diagram figure (pl. 1d and fig. 1d) is associated with a group of animals, elk, goat and sheep, for reasons which are obscure. The last figures at the north end of the canyon are two perfect

⁹ Garrick Mallery. Picture Writing of the American Indians. 10th Annual Report Bureau of Ethnology, 1888-89.

crescent moons, which are associated with a few linear human figures, a hollow diamond shape, and some undecipherable line figures. These in the main represent this type of carving but it is obvious that they are in a minority as compared with the more realistic depictions of animals and human beings.

It is worth noting that the majority of these petroglyphs are grouped on certain favorable exposures and that those on each small area have certain generic resemblances as though they had been made by one man. The grouping of subjects seems sporadic and without purpose so far as our study could ascertain, but it did appear that animal figures were usually together, as were "water monsters" while human figures might be found with either. The older men of the Wishram Indians said that these figures represented the "spirit" of the artist, and that they were made by "old, old people." Exactly how they correlated the first knowledge with the second fact was obscure. They made no distinction between the unique petroglyphs of the canyon and the much more abundant and apparently more ancient pictographs which characterize all the rim rock borders of the vicinity.¹⁰

On comparing the petroglyphs from this canyon with the pictographs so abundant on both sides of the Columbia River in this vicinity we found few resemblances. The great bulk of the pictographs are done in dull red, more elaborate ones in red and white, and a few in red, white and yellow. The designs are mostly conventional. Many of them are circles with radiating arms, broken disks, scrolls and human figures with round heads, often with spread arms, and simply delineated bodies. These human figures are usually painted in red, although some are outlined in white. We saw no animals of this type, but we learned of one small elk done in red on the Washington side at Big Eddy. There are a few very crude petroglyphs around the rim rock north-

¹⁰ In this connection a statement mentioned in the Wasco tale "A Wasco Woman deceives her Husband" seems worthy of note. Tenino was a village of the Wayam Indians situated nearly five miles above The Dalles, on the Oregon side, and the first Shabaptian village on the south side of the Columbia east of Chinookan territory. A man of this village "made pictures on the rocks to amuse the youngest child—pictures of deer, birds and weapons." Edward Sapir, *Wishram Texts*, I, c. 242, 243.

west of Spedis but these are either indistinct linear human figures or the edges of painted designs. There are also some large anthropomorphic faces done in red on the rim rock immediately behind Spedis, but they bear little resemblance to the elaborate mask-like faces of Petroglyph Canyon.

Around the mouth of the Willamette River, on the Washington shore of the Columbia, are a few large boulders with exceedingly crude faces pecked on them. Many others having the surface and face of the rock toward the river are elaborately pecked, often an inch deep. Here some circular designs are observable, but as a rule a series of pits with connecting channels characterize the type. At Fisher's Landing, Washington, a large human figure about five feet long has been carved on the exposed surface around a mortar-hole twelve inches deep. Round eyes, hands, and ribs have been carved, and two legs are suggested by the natural conformation of the rock. Several of the more crudely pecked rocks near here are now being washed out of the bank at Mr. Henry Biddle's place seven miles north of Vancouver, which were covered up long ago, when the Columbia in one of its infrequent but periodic shifts deposited instead of cut on this part of the Washington shore. The observations made by Mr. Biddle on this matter merit more investigation, for a great antiquity is implied. The point at issue in this paper, however, is to show that these lower river petroglyphs, intrinsically interesting though they be, are apparently not stylistically connected with the type in Petroglyph Canyon.

There are up-river examples seemingly of this old type that have come to our notice. The first of these being a large boulder from the junction of the Umatilla and Columbia rivers, now in the City Hall Museum at Portland, Oregon. The decoration consists of a large-eyed and large-mouthed human face, with deeply pecked designs around it. The end of the rock has a similar well-designed face. A second example is from the Yakima area near Wallula Junction, Washington,¹¹ and consists of an intricate series of circles and lines deeply cut into the top of a large rock which

¹¹ Harlan I. Smith, *op. cit.* p. 123, pl. VII 1910.

projects three feet above the ground. While there is considerable discrepancy between examples like the last two in skill of execution, there occur such good transitional types along the lower Columbia River that their general contemporaneity is strongly suggested. The deep, often illegible, pecking, the great use of circles, and above all their position on river-side boulders, often on the top of these, argues strongly for their relationship. The problem is involved with that of the elaborate carved stone figures from the Columbia area, and the temporal placing of the one type will probably apply to the other.

The nearest petroglyphs which have come to our notice, that seem closely related to those of Petroglyph Canyon are from the vertical basaltic columns on the east side of the Columbia Sentinel Bluffs, immediately above Priest Rapids.¹² The same grinding technique has evidently been employed, and much the same type of design is used. The elaborate, though conventional human figure, with a similar headdress, and the squarish faces with short radiating lines are almost identical. Also the well drawn animal figure, which Harlan I. Smith calls a "goat," but which by its elaborately tined antlers much more strongly suggests an elk, is very similar to elk figures from Petroglyph Canyon (fig. 2, n, o, p). The open mouth and the tail are close resemblances in style. The less distinct human figures are of the type of those from Petroglyph Canyon. Most of the other petroglyphs from this vicinity shown by Smith resemble those found associated with the pictographs around the Dalles region. They are faint, linear, and almost always conventional in design. The pictographs too suggest those of the Dalles region in their red and white color and are mostly variations of a circle, or sun disk motif with radiating lines.

The petroglyphs from Buffalo Rock,¹³ eighteen miles above Lewiston, Idaho, on the east bank of the Snake River, bear considerable resemblance to those from Petroglyph Canyon, especially in the delineation of mountain goats. These, as well as the human

¹² *Ibid.*, p. 121, pl. XI.

¹³ Spinden. The Nez Percé Indians, Mem. Amer. Anthr. Assoc., Vol. II, 231, pl. x, figs. 4, 5.

figures, are much cruder than those in Petroglyph Canyon, but their realistic qualities are very similar. The appearance here of buffalo-figures done in red paint, when compared with the red pictograph from Petroglyph Canyon (fig. 1, f), is of importance as regards their relationship. It is unfortunate that these buffalo pictographs are not reproduced by Spinden, but the description tallies quite well with our pictograph from the Washington shore at the Dalles. The figures of men with buffalo horns described from here by Spinden¹⁴ also tally with a small horned human figure noted in Petroglyph Canyon. The frequent occurrence of carvings of mountain sheep or goats, and elk or deer, noted by Spinden is also an important similarity.

After a careful study of Mallery,¹⁵ the closest analogy to be found is a series of pictographs from Shinume Canyon, Utah. These Mallery calls "petroglyphs," but says that according to the "draftsman's general notes" they are painted. Whether they were pecked out and then painted, cannot be ascertained. The realistic treatment of the animals, buffalo, elk and mountain sheep is remarkably similar to that of the Petroglyph Canyon animal series. Some of the human and semi-human figures from the Colorado River, Utah, also resemble those from Petroglyph Canyon, but the data are inadequate to make exact comparisons. Photographs in the possession of the Department of Anthropology of the University of California, received from J. A. Reid of Reno, Nevada, show petroglyphs from near Virginia City, Nevada, which resemble the petroglyphs from Buffalo Rocks, Idaho, as well as those from Petroglyph Canyon in their realistic drawings of mountain sheep. In a letter to the Department in regard to petroglyphs from the east fork of the Walker River, near Yerington, Nevada, W. A. Frazier says, "The rocks are literally covered with drawings. Most of the drawings are of trees and animals; those of the coyote and mountain sheep are the best, though many others are very good." From the foregoing it may be seen that while the data are scattered and incomplete the Dalles

¹⁴ Spinden, *ibid.*, p. 232.

¹⁵ Garrick Mallery, *Picture Writing of the American Indians*. 10th Ann. Rep. Bur. Ethn. 1888-89, p. 121, fig. 89.

petroglyphs in question find their closest analogues in the Great Basin area, and would appear to mark the northwesterly limit of that type.

It is of course impossible to positively correlate these drawings with any one of the Great Basin tribes but it seems quite probable that they were made by the Snake Indians, a branch of the Shoshoni. The immediate southern bank of the Columbia was found to be largely uninhabited by Lewis and Clark from near the mouth of the Walla Walla to below the Dalles,¹⁶ because of fear of attacks by the Snakes. It is possible that people of these tribes carved the petroglyphs in question either during periods of peace, or to mark their incursion into enemy territory. Trade relations were also maintained between the Nez Percé and the local Indians of the Wishram village, as we were assured by aged Indians now living at the latter place. While there is a strong generic resemblance between the petroglyphs recorded from the Nez Percé area and those from the canyon in question, the Nez Percé area carvings are cruder, and not as highly naturalistic as the animal petroglyphs from farther east in the Great Basin. The petroglyphs already referred to, which were recorded by Harlan I. Smith from the vicinity of Priest Rapids, on the east side of the Columbia, suggests the same origin although they are even more definitely in Shahaptian territory than are those at the Dalles.

The validity of the tentative conclusions arrived at in this paper can only be substantiated by a more thorough study of the petroglyphic and pictographic art of the upper Columbia River and adjacent areas. If the conclusions are accepted they suggest a much wider range for the Basin tribes, probably just after the acquisition of the horse, than is at present accorded them. Whatever conclusions may be drawn, the intrinsic interest of these highly naturalistic and animated rock carvings, isolated in one small canyon at the Dalles, will still remain.

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¹⁶ A. B. Lewis, *Tribes of the Columbia Valley and the Coast of Washington and Oregon*, Mem Amer Anthr Assoc., Vol 1, p 195, 1906.

DIFFUSION AS A CRITERION OF AGE¹

By WILSON D. WALLIS

IN EXPLANATIONS of culture development the pendulum has had its swing. A Plato and an Aristotle assume a common origin for all forms of human civilization, with subsequent dissemination from a single source of origin. The sixteenth and seventeenth century controversies between the Moderns and the Ancients had as their background a knowledge of the dissemination of Hellenic culture and a feeling that European civilization was indebted to Mediterranean influences for its impetus. Darwinism diverted speculation into new channels.

Students of culture hunted anew for origins and for developments, attempting to read into, or out of, all phases of social life the story of beginnings and of unfoldings.

But a theory of evolution which has to reckon with possibilities of diffusion encounters difficulties not presented when simple unilinear evolution is the assumption. Thus Tylor, in his famous statistical theory of the evolution of exogamy, patrilocal practices, and other 'adhesions,' gives no warning that the diffusion of a trait plays havoc with the normal course of evolution—if there be a normal course—and upsets the value of the correlations which he accepts as indicating the trend of development. So far as diffusion is responsible for a trait, peoples have it not because it has developed out of the tribal context, but rather because their neighbors accepted the trait and handed it on. The work of Hobhouse, Wheeler, and Ginsberg, calls attention to the necessity in any theory of evolution of considering diffusion as an agency, if we are to give proper weight to the correlation of traits. The diffused trait is a superimposition rather than a growth, even though firmly embedded in the adopting culture, for it has not evolved out of the content of the tribes in which it flourishes, but has been introduced

¹ A paper read at Section H, British Association for the Advancement of Science, Toronto meeting, 1924.

The bearing of diffusion upon the interpretation of similarities in cultures is obvious. If diffusion is at work, the similarities in cultures which at first glance strike us as extraordinary, or as the outcome of common efforts directed toward similar goals, are accounted for by external agencies. The wide distribution of a cosmogony which starts with water and pictures land as coming later, may seem to have its origin in many similar rationalistic attempts to determine the fundamental elements in the world of nature; but if the explanations of one region have been carried to another and adopted by that other, then rationalism is secondary to diffusion as the historical origin, however active the rationalistic impulse may be, and no matter how thoroughly it does its work. In this event, diffusion is responsible for the presence of the trait, rationalism adopts and adapts it.

In recent years we have become increasingly aware of the large part which dissemination of culture plays in civilization on the lower as well as on the higher planes. Trade routes mean exchange of ideas as well as of articles. Culture contacts are fructifying. No culture is so likely to lapse into stagnation as the culture which is isolated, which lies without the paths of diffusion.

In the last few years there has been a tendency among several anthropologists to use distribution as equivalent to diffusion, to take for granted that a continuously distributed trait has but one origin in the area of distribution, the inference being that from this single center of origin diffusion has carried the trait into adjoining territory, introducing it to surrounding regions. Coupled with the tendency to identify continuous distribution with diffusion is a tendency to use diffusion as a criterion of the comparative age of traits, to say that the more widely distributed trait is the older, it being acknowledged, of course, that there are exceptions to the rule. Yet no such correlation of distribution with age has been established, nor can justly be inferred from a study of culture. We suggest, further, that to infer age from distribution is not consonant with the facts of culture and that such a criterion is more apt to lead us astray than to lead us aright. The supposition that the more widely diffused trait is the older

is based on the fact that a culture trait has a tendency to spread. Indeed a new invention or a new idea tends to spread as truly as an outcrop of measles. It goes from man to man, from group to group, from culture area to culture area—witness the spread of tobacco. It is obvious that while a trait is spreading, its greatest age is synonymous with its greatest distribution.

But a trait does not continually and eternally spread; certainly few traits expand indefinitely. There is contraction of culture traits as well as expansion, a falling off in territory as well as accretion of territory—otherwise we should still be using bows and arrows.

The spread of the Greek language, or of monarchies, or of a style of dress, will serve as examples of geographical expansions followed by geographical contractions. Greatest age is synonymous with greatest distribution only when the trait is on the increase; the converse is true when the trait is on the decrease. Culture traits expand, but culture traits also shrink. Nor do all traits show a like tendency to spread. Some show no tendency to travel into foreign territory. The rapidity with which traits make their way into new culture areas varies as much as does the speed of transportation devices. Some travel with the relative speed of aeroplanes, others with the crawling gait of ox teams. Some traits tend to travel with great rapidity, others are inherently incapable of making much progress. One would not expect refrigerating devices to make much speed beyond the Arctic circle, nor furnaces to be in great demand in torrid deserts.

Culture traits have a dynamic, and the dynamic is specific. To infer age from distribution is to leave out of the reckoning the specific dynamic tendencies which characterize culture traits.

Trait A may be older than B though less widely diffused, because A lacks the dynamic of culture contagion inherent in B. The different rate of diffusion of firearms and of the Copernican theory will serve as examples of the specific dynamic of culture traits.

Whether a trait spreads and how fast it spreads depends upon the nature of the trait. The inference that relative distribution is an index to relative age implies equal possibilities for culture diffusion, whereas traits do not possess equal culture possibilities.

The rapidity with which a trait spreads depends, moreover, not merely upon the character of the trait, but also upon the character of the culture to which it is taken. The telephone has not spread with equal facility in all lands, the main reason being that all lands were not in the same state of culture preparedness. The culture to which the trait is taken must be ready to accept it, or the visiting trait finds no lodgment, is an unwelcome guest. The counterpart to the dynamic of traits is suitable soil in the culture areas into which the trait travels. The adjacent area is not always fertile soil for the new trait; contiguity does not always assure continuity.

Diffusion of culture implies of necessity older culture traits not so widely diffused. Since a trait can travel only into regions where culture is already established, the diffused trait is a recent arrival among older traits, the widely diffused trait of necessity being younger than the heterogeneous traits amid which it finds lodgment, traits which are older but, of necessity, many of them not as widely distributed as the new-comer. How the facts could be otherwise, it is difficult to imagine. The alternative is to suppose that migrations of peoples carried the trait over the area in which we find it diffused; but this improbability betokens migrations of peoples, rather than true culture diffusion.

Where diffusion is not a superimposition upon older traits, it is a displacement of older traits; as, for example, when the metal ploughshare displaces the wooden ploughshare, or when the automobile displaces horse transportation. Here, of course, the more widely spread trait is the more recent, the less widely spread one is the older. So it is whenever diffusion means introduction of a new trait by displacement of an older trait, a not uncommon phase of diffusion.

But one should find something more conclusive than *a priori* reasons; empirical issues, not deductive reasoning, must be the deciding factors. Unfortunately savagery promises little help, for we do not have knowledge of historical processes in savagery when development is uninfluenced by civilization.

We can solve our problem there only by taking the answer for granted before we start; this is not the most approved method,

although it has a certain vogue. No help seems forthcoming unless we apply the question to the historical civilizations where an answer in fact can be given. This necessity, we suspect, will not lead us much astray, for the conditions under which diffusion works in civilization are different in degree rather than in kind from the conditions under which diffusion goes on in savagery. Moreover, to no other culture area can we put the question and obtain an answer in terms of facts.

Let us, then, use the only available alternative and appeal to history. In order to test the value of the criterion of geographical distribution as an index to age, we selected chapters in Breasted's *Ancient Times* (Boston 1916) and listed by random selection the culture phases in those chapters. The chapters were II, IV-IX, and XXI. Random selection from these chapters yielded the following list of culture phases: Bronze, mud-brick huts, irrigation canals, phalanx, split-wheat, plough, wheel, horse, battering-ram, coinage, concept of last judgment, cuneiform writing, town walls, market-place, settlements, roofs, metal, migrations, families, carts, business, merchants, books—in all, twenty-three. Let us place in the same class culture traits which are comparable, such as those of material culture, those of social life, those of religious life, respectively. When we thus classify them, or if we do not classify them at all, it is evident that the relative distribution of these respective features is not the same through successive periods of history. Thus, in the case of the first three, bronze, mud-brick huts, irrigation canals, it is evident that the relative distribution of these three traits does not remain constant through successive centuries. Judged by the test of distribution, it would appear, say in 3000 B.C., that mud-brick huts and irrigation canals are older than bronze; but by 100 B.C. the distribution of bronze over the Mediterranean and contiguous areas is greater than the distribution of either mud-brick huts or irrigation canals. So with the next three traits of material culture in the above list, namely, split-wheat, the plough, the wheel. In the early Bronze age the distribution of split-wheat about the Mediterranean area, including the Swiss Lake Dwellings, was greater than the distribution of either the plough or the wheel.

In subsequent centuries the distribution of split-wheat was less than that of either the plough or the wheel. The plough, no doubt earlier in origin than the wheel, was at one time the more widely distributed of the two; by the Christian era the wheel was in use over a wider area than the plough. In the next three features, horse, battering-ram, coinage, we find a similar story of relative rise and fall of respective culture traits.

The theory that the geographical distribution of a feature is closely related to its age, and that the area of intensive development is the area of origin, is presented by Clark Wissler in *Man and Culture* (1923) and again by Kroeber in his *Anthropology* (1923). Both liken the spread of a culture feature to the outgoing waves which ensue when a pebble is dropped into a pool of water. But a more apt illustration is the attempt of water to find its own level; the course taken is wont to be irregular; it makes progress here rapidly, there slowly, at times encountering impassable barriers.

In order to test the theory further, we opened the book of Wissler at random and made a list of the first fourteen culture features there referred to by him. The place chanced to be page 150, a page in the chapter in which the author discusses the correlation between age and distribution. From page 150 to page 157 inclusive, which marks the end of the chapter, the following culture traits are referred to, in this order: Pottery, paint, swastika, spiral, cutting off a finger, sacrifice to the sun, sacrificial blood-letting, human sacrifice, hitches, weaving instruments, age-grade societies for men, fire-drill, chipping of stone, lance.

With regard to these respective culture traits we inquire: Is the area of intensive development the area of origin? Is the center of the area of distribution the place of origin? Is the more widely distributed trait the older one?

In the Old World the area of intensive ceramics has shifted from time to time. Probably there has been but one area of origin in Europe. Hence we find the place of origin only if we take the correct century as the one in which to identify intensity of development with age of the trait. Otherwise we infer the place of origin now as the Continent, now as Britain, now as the valley of the Nile, now as Aegean lands.

Paints, the next feature in the list, is not susceptible of treatment in this manner, and little can be learned of origins.

The migrations of the swastika are not so well vouched for as the travels of the spiral design. The latter centered in the Aegean, thence found its way to Scandinavia and from there to Ireland and the British Isles. Meanwhile the center of distribution was shifting to north and west, for the spiral did not spread with the same facility to east or south, although, of course, the place of origin was not shifting. The place of origin does not remain the center of the area of distribution.

The practice of cutting off a finger is not susceptible of historical treatment, and we pass to the next feature listed above, namely, sacrifice to the sun. In the Old World such sacrifice first centers in Iran, but at a later date, when the Mithraic cult had penetrated the Roman Empire to the west it is perhaps more prevalent in Europe than in Iran, while at an intermediate (?) time it centers in Egypt. Here, again, there is a single place of origin, but the center of distribution shifts from century to century, and so tells a varied story, each succeeding tale contradicting to that extent the previous one, each falsifying the testimony which would make center of distribution equivalent with place of origin. We are thus brought back to the conclusion, that distribution is not an index to the comparative age of traits, nor is intensive development an index to place of origin.

A phase of culture does not radiate like sound in a uniform medium, travelling with equal rapidity in all directions, dying down as it gets further away; but rather, like a stream of water, flows hither and yon, here slowly, there rapidly, now spreading out in long depressions of immense area, now confined within narrow and tortuous channels. There are seas and lakes of culture influences, there are also bays and inlets and even trickling courses. Sometimes the place of origin is a lake, sometimes it is but a spring, the culture growing and spreading as it travels from one locality to another, so that sometimes the area of most recent occupancy is the area in which the trait is most widely distributed and most intensively developed. Like Christianity, many another trait of culture flourishes best far from the place of origin. The

place of origin remains, wherever that may be; meanwhile the center of distribution shifts like the center of low barometric pressure, while the center of intensive development is likewise as liable to shift as the center of a cyclone area. Cataclysms are more startling than slow infiltrations, but the latter are none the less effective in making significant changes. Culture seeps as well as flows, but does not seep equally in all directions; and when it flows, often the stream is largest far from its source.

We cannot infer age from distribution unless wise enough to make the inference at the proper historical moment, and, unless we have history at our service we shall not know the proper moment for making the inference. In the absence of history, then, we can make no such inference, for we are as likely to make the wrong one as the right one. The earliest features have the first opportunities for diffusion, but later ones appear and submerge the earlier. As soon as this occurs—and it is constantly occurring—the more recent features are the more widely distributed. Is this not the manner in which development, advance, change, take place? When change takes place, some recent traits become more widely distributed than certain older ones.

The assumption that distribution is an index of age is based on the implicit assumption that, other things being equal, the more widely distributed feature is the older one, since culture traits have a tendency to spread from place of origin to adjoining regions. But other things are never equal, being, on the contrary, egregiously unequal. Differences in culture areas must be taken into account. One culture is ready for the trait and receives it; another is unprepared, and rejects it. There is a dynamic in culture traits which further their distribution in unequal degree.

Agriculture, for example, may spread with far greater rapidity than does pottery or basketry; canoes may be adopted with much greater readiness than dog transportation, or, of course, the other way round, depending on a number of factors of which usually we are ignorant. The Ghost Dance religion of aboriginal North America spreads rapidly over an area in which we find no other trait of as great distribution, though we happen to know that almost all other traits of the area in question are older.

Objection may be made that analogy from our own culture is misleading, inasmuch as the possibilities of diffusion are greater in civilization than in savagery. But the difference is merely an intensification of the factors at work in savagery, rather than the introduction of new ones. Fads spread with great rapidity in civilization, but fads spread also in savagery. The barrier of language is greater in savagery, but is no insurmountable barrier, and culture influences break through. The savage is slow to perceive the utility of a new device. In time, however, he perceives it, provided the new device is not too far removed from his culture setting. This holds also for civilization: witness the distribution of the telephone, spreading with more rapidity in America than in England, more rapidly in the commercial districts than in the non-commercial, more rapidly where science is developed and applied than where this is not the case.

If we are not to make application of the law of diffusion in civilization where history can check up inference, where are we to test it? Without testing it, how can we have confidence in it?

To sum up: the conditions which lead to intensive cultivation of a trait are various: the region in which a trait originates is not always the region in which the trait attains intensive development. Comparative distribution is not evidence of comparative age. The tendency to spread differs with traits and differs with culture areas. That traits disappear is as well established as that traits appear. The disappearing trait shifts the bounds of distribution, giving negative correlation of age with geographical distribution. If certain isolated similar traits are to be interpreted as due to diffusion rather than to independent origin, then the sparsely distributed trait is indicative of greater age than one uniformly distributed over the area in question. As the trait drops out in area after area, the age of the trait becomes correlated with sparseness of distribution rather than with extensiveness of distribution. But if the one criterion is as good an index to age as the other, then neither can be relied upon.

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MAYA, NAHUATL, AND TARASCAN KINSHIP TERMS

By PAUL RADIN

THE MAYA, Nahuatl, and Tarascan kinship terms presented below were extracted from the works of Spanish authors, as the citations will show. This work was financially supported by the New York Academy of Sciences.

MAYA KINSHIP TERMS¹

yum. Father.

naa. Mother.

*zucum. Father's father.

*mam. Mother's father.

mim. Father's mother.

chich. Mother's mother.

*zucum. Older brother.

cic. Older sister.

ich. Uterine sibling.

øeyún. Father's brother.

ixcit. Father's sister.

acan. Mother's brother.

øena. Mother's sister.

caazucum. Male cousin.

caacic. Female cousin.

icham. Husband.

*haan. Wife's father.

nohyum. Husband's father.

ixhaan. Wife's mother.

nohcó. Husband's mother.

mú. Spouse's brother.

baí. Wife's brother.

hachil. Child's parents-in-law.

*mehen. Son, man's brother's child.

ixmehen. Daughter.

i. Son's child.

abil. Daughter's child.

*iøin. Son's son.

*mam. Daughter's son.

*iøin. Younger brother.

*iøin. Younger sister.

*mehen. Brother's child.

*mehen. Woman's sister's child.

achak. Sister's child.

al. Woman's brother's daughter.

*mam. Father's brother's child.

atan. Wife.

*haan. Son-in-law.

ilib. Daughter-in-law.

haauan. Woman's sister-in-law.

* Indicates that the term is used elsewhere in the system.

¹ From Beltrán, *Arte del Idioma Maya*, 1742.

NAHUATL KINSHIP TERMS²

tatli. Father.	tepil-(tzin). Son.
mantli. Mother.	noconeuh. Son.
	yacapantli. Daughter.
	teconeuh. Daughter.
colli. Grandfather.	*yxuihtli. Grandson.
citli. Grandmother.	teixuih. Granddaughter.
*teachcauh. Older brother.	*teiccauh. Younger brother.
*teueltiuh. Older sister.	*teicu. Younger sister.
tlatli. Uncle.	
auitl. Aunt.	
*yxuihtli. Father's brother's son.	*teachcauh. Older male cousin except father's brother's son.
teixuiuh. Father's brother's daughter.	*teueltiuh. Older female cousin except father's brother's daughter.
	*teiccauh. Younger male cousin except father's brother's son.
	*teicu. Younger female cousin except father's brother's daughter.
teoquichui. Husband.	tecuaauh. Wife.
montatli. Wife's father.	montli. Son-in-law.
monnantli. Wife's mother.	ciua-montli. Daughter-in-law.
textli. Wife's brother.	vezuatli. Husband's sister.
vepulli. Husband's brother, wife's sister.	

TARASCAN KINSHIP TERMS³

*tata. Father.	*vuache. Son.
nana. Mother.	vuache cuxareti. Daughter.
cura. Grandfather.	nimatequa. Grandchild, older brother's grandchild.
cucu. Grandmother.	*yhtza. Older son's daughter.
vreti. Older brother and sister.	*vuengamberi. Brother.
mimi. Older brother.	*vuengamberi. Sister.
pipi. Older sister.	vuece. Sister.

² From Molina, Vocabulario de la Lengua Mexicana, 1571.³ From Gilberti, Diccionario de la Lengua Tarasca, 1559.

*tata. Father's brother.	aitaequaro vauche. Older brother's son.
aita. Father's brother.	*yhtza. Older sister's son.
papa. Mother's brother.	
vaua. Father's sister.	
tzitzi. Mother's sister.	

*vuache. Parent's brother's child.	*yhtza. Parent's sister's child.
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In addition to the above, the term for cousin is given in a descriptive manner, simply as son or daughter of my uncle or aunt.

minguarehpeti. Husband.	minguarecata. Wife.
	quahchacucata. Wife.

tarascue. Wife's parent.

ytsicue. Husband's brother.	tuuiscue. Wife's sister.
yuscue. Wife's brother, husband's sister.	

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KINSHIP TERMS IN SOME LANGUAGES OF SOUTHERN MEXICO

By JAIME DE ANGULO

I HAVE assembled the following list of kinship terms from the linguistic material collected in Oaxaca for the Dirección de Antropología of Mexico. The languages included are those of the Zapotecan family (among which I class Chinanteco), Chontal (Hokan family), and Mixe (unclassified yet). The phonetic transcription has been simplified.¹ I have omitted the pitch tones and other niceties which are of especial interest only to the linguist. I have limited myself to such symbols as are commonly accepted by all American ethnologists and therefore require no special explanation, except the symbol “ which I have used to indicate *nasal breath*. It may also be well to call attention to the fact that the Zapotecan languages are essentially monosyllabic. Therefore all terms which comprise more than one syllable may safely be assumed to be compounds in which I was unable to determine which is the essential *semantema*.

1. Father:

Zapotec	bishuas
Mixtec	ta
Mazatec	nami
Chatino	sti
Chocho	ta
Cuicatec	tshiða
Chinantec	“mii
Mixe	tyɪdz
Chontal	ai

2. Mother:

Zapotec	naA
Mixtec	ði
Mazatec	na
Chatino	sh'A

¹ All open vowels are approximated to the nearest closed one. All shades of unrounded u are indicated by i. Small capitals represent nasals.

Chocho	nana
Cuicatec	tshyaku
Chinantec	sa'
Mixe	tag
Chontal	ama

3. Paternal uncle:

Zapotec	tiwa (Spanish <i>tio</i> ?)
Mixtec	ðito
Mazatec	tsini
Chatino	<i>old brother</i> (t'A stE)
Chocho	zni
Cuicatec	ðunu
Chinantec	'Aa
Mixe	haym
Chontal	the same as older brother (7).

4. Paternal aunt:

Zapotec	natiya (Sp. <i>tia</i> ?) (cf. No. 2, naA)
Mixtec	ðiði
Mazatec	tshukwɪ
Chatino	<i>my father's sister</i>
Chocho	va
Cuicatec	ðuði
Chinantec	lam
Mixe	tsugu
Chontal	the same as older sister (8)

5. Maternal uncle: the same terms as for paternal uncle.

6. Maternal aunt: the same terms as for paternal aunt.

7. Older brother:

Zapotec:	from brother to sister (or vice versa)	pizaa
	from brother to brother	betza
	from sister to sister	benda
	from brother to sister (or vice versa)	kwa'a
Mixtec:	from brother to brother	nyani
	from sister to sister	ku'u
Mazatec	tsa	
Chatino	t'a	
Chocho	kitsh	
Cuicatec	ðinu	
Chinantec	shru	
Mixe	atsh	
Chontal	sapi	

8. Older sister:

Zapotec	See No. 7
Mixtec	do.
Mazatec	nitsha (cf. No. 7)
Chatino	the same as <i>brother</i>
Chocho	do.
Cuicatec	kave
Chinantec	ni
Mixe	tshyī
Chontal	the same as brother

9. Younger brother: the same as older brother in all except:

Mixe	itsh
Chontal	bepo

10. Younger sister: the same as older brother in all except:

Mixe	utsh
Chontal	bepo (as for younger brother)

11. "Offspring" (daughter the same as son in all except Mixe):

Zapotec	shri
Mixtec	(strangely enough I can find no data in my notes)
Mazatec	ti
Chatino	snye
Chocho	sha
Cuicatec	ḍaya
Chinantec	hong
Mixe	Ung
Chontal	'wa

12. Son:

Mixe	mAng
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13. Daughter:

Mixe	nīsh
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14. Paternal grandfather:

Zapotec	kul
Mixtec	<i>old father</i>
Mazatec	do.
Chatino.	do.
Chocho	do.
Cuicatec	do.
Chinantec	do.
Mixe	ap
Chontal	<i>old father</i>

15. Paternal grandmother: "old mother" in all except:

Mixe og

16. Maternal grandfather: same as on the paternal side.

17. Maternal grandmother: same as on the paternal side.

18. Paternal greatgrandfather: same as grandfather.

19. Grandchild:

Zapotec	zyaꝥa
Mixtec	same term as for <i>child</i>
Mazatec	do.
Chatino	do.
Chocho	<i>young man</i> or <i>youth</i>
Cuicatec	same term as for child
Chinantec	gyia
Mixe	okunge
Chontal	same term as for child

20. Grandson:

Mixe okmang

21. Granddaughter:

Mixe okn̄ish

22. Cousin: In all languages the term used for brother is applied to cousins.

23. First cousin once removed, second cousin: Data lacking.

24. Nephew (son of my brother or my sister):

Mixtec	ðashi
Mixe	tsokmang
Chontal	like <i>uncle</i> , i.e. older brother (7) (other languages: data lacking)

25. Niece (daughter of my brother or my sister):

Mixtec	ðiku
Mixe	tsokn̄ish
Chontal	like aunt, i.e. <i>older sister</i>

26. Husband:

Zapotec	tshiel
Mixtec	<i>my man</i>
Mazatec	do.
Chatino	do.

Chocho	rsi
Cuicatec	<i>my man</i>
Chinantec	do.
Mixe	meadzo'
Chontal	<i>my man</i>

27. Wife: "my woman" in all except Zapotec, Chocho, and Mixe, where the term used is the same as for "husband" (and therefore really means "married" or "spouse").

28. Second wife: Data lacking.

29. Father-in-law (of either spouse):

Mixtec	the term used really means <i>father-brother-in-law</i>
Cuicatec	<i>father</i> (cf. No. 1)
Chinantec	dza nyi literally <i>other father</i>
Mixe	<i>grandfather</i> (cf. No. 14)

30. Mother-in-law (of either spouse):

Mixtec	<i>mother-sister-in-law</i>
Chocho	<i>mother</i> (cf. No. 2)
Chinantec	yī mu sa' <i>lady before mother</i>
Mixe	<i>grandmother</i> (cf. No. 15)

31. Brother of either spouse (also sister of either spouse):

Mixtec	ðiðo
Chocho	kunyadu (Spanish)
Chinantec	<i>sister of my woman</i>
Mixe	kap

MAYA INSCRIPTIONS: GLYPHS C, D, AND E OF THE SUPPLEMENTARY SERIES

By JOHN E. TEEPLE

MOST Initial Series in the Maya inscriptions are accompanied by a group of seven or eight glyphs which have been called the Supplementary Series, and which are supposed to determine the date of the Initial Series in some other form of reckoning. While it has been assumed that we probably have to deal here with a lunar reckoning, up to the present it has been impossible to determine the system used.¹

The glyphs in question are normally about eight in number, and they are usually referred to as Glyphs G, F, E, D, C, X, B, A, reading in order from left to right. Glyph A always has a numeral 9 or 10 attached, and it is agreed that these refer respectively to the 29- and 30-day months. Glyphs C, D, and E also frequently have numerals attached. It is the purpose of this investigation to determine if possible the mode of reading these three glyphs with their numerals, and the application of the reading to the Initial Series of each.

The numeral attached to Glyph C is never greater than six and never less than two. At times Glyph C, however, stands without a numeral, probably with the value 1. It has been suggested before that Glyphs C, D, and E probably refer back to the groups of lunations recorded in Dresden Codex, pages 53-58. Successive moons are there recorded in groups of five and six in a fairly regular order. This present work was started on the assumption that Glyph C represented the number of complete lunations which had occurred since the end of the last five or six group. The development of the work has borne out this assumption, and further has shown the values to be assigned to Glyphs D and E. The work consisted in an arithmetical analysis of over eighty supplementary Series to determine what conditions would meet the requirements and bring the various series into mutual

¹ See S. G. Morley, *Holmes Anniversary volume*, 1916, and Copan, 1920.

agreement. This analysis, of course, required many thousands of computations, and instead of giving up a good many pages here to the reproduction of it, it seemed simpler to state the results of the findings and show the application to the various series. I think the agreement will be close enough to convince anyone that the interpretation has been correct.

It was found that Glyph C does show the number of completed lunations since the last moon group ended. 2C then represents 59 days; 4C, 118 days; 5C, 148 days, etc. It was found that Glyphs D and E are used to represent the remaining number of days smaller than one complete lunation, Glyph D being used when the number of days is less than 20 and Glyph E when the number is more than 20. Glyph E itself apparently stands for 20 days. 3E represents 23 days, 6E represents 26 days, etc. Glyph D stands for a single day. 8D stands for 8 days, 19D for 19 days, etc. It is obvious that when Glyph E is used numerically Glyph D can have no numerical function although it is often present without coefficient. A group, then, reading 6E, D, 4C would represent 26 plus 118 = 144 days, the D not being counted. A group reading 10D, 5C would represent 10 plus 148 days = 158 days. The former Supplementary Series is recorded in the Temple of the Sun in connection with the Initial Series date 1.18.5.3.6 and indicates that the last preceding moon group ended 144 days before that date, i.e. at 1.18.4.14.2. The latter Secondary Series is recorded in the Temple of the Foliated Cross with the Initial Series 1.18.5.4.0 and indicates that the preceding moon group ended 158 days before that date, i.e. at 1.18.4.14.2, which it will be noticed is exactly the same statement as the one we found in the Temple of the Sun.

This investigation covered a total of 84 series. Eighty of these are recorded in Mr. S. G. Morley's article in the Holmes Anniversary Volume, and are numbered from 1 to 80 here just as they are there. Four additional series have been included, No. 81, that on Stela K at Copan 9.12.16.7.8; No. 82, that on Stela D at Copan 9.15.5.0.0; No. 83, that on Temple 11 at Copan 9.16.12.5.17 and No. 84, that on Stela 22 at Naranjo 9.12.15.13.7. Of these eighty-four series four lack a definite Initial Series, consequently

they must be excluded from our investigation. These are Nos. 30, 32, 57 and 67. Eleven others do not show agreement with results because they are incomplete, Glyphs D and E being entirely lacking, or if they are present being obliterated or illegible. It is assumed that in these eleven series the attempt was not made to fix the date exactly but only the completed lunations were recorded without the odd days. These eleven are Nos. 10, 38, 50, 52, 55, 60, 62, 64, 69, 78 and 83. This leaves a residue of sixty-nine series in which we have the complete initial date and a complete statement of C, D and E which may be submitted to examination. Of these sixty-nine it was found that fifty-five could be brought into an entire agreement by reading C, D and E by the above method. Eight more required a slight correction such as we are accustomed to find necessary at times in the inscriptions, and only six could not be brought into agreement. The list of fifty-five which agreed fairly well are given in Table I. Column 1 gives the consecutive numbers from 1 to 84 as used in this article. Column 2 names the city and the letter or number of the monument. Column 3 gives the Initial Series of the monument. Columns 4, 5 and 6 give the readings of Glyphs C, D and E respectively as they appear on the inscription. Column 7 gives the number of days, shown by C, D and E in each case, which are to be deducted from the Initial Series date to reach the date when the previous moon group ended. Column 8 gives the date when the moon group ended as obtained from the subtraction. Column 9 gives the day number of the tzolkin when this moon group ended, the days of two succeeding tzolkin being numbered consecutively from 1 Imix of the first one to 13 Ahau of the second one, a total of 520 days. Column 11 gives the corresponding day of the tzolkin when a moon group would have ended, according to pages 53-58 of the Dresden Codex, on the assumption that the day 9.16.4.10.9.13 Muluc ended a moon period. Column 10 is derived from column 11 by the addition or subtraction of one, two, or three moons. If our analysis has been correct columns 9 and 10 should agree within a day or two. If our analysis is wrong then we should expect no agreement whatever.

In using Table I it should be borne in mind that absolute agreement between columns 9 and 10 cannot be expected. In the first place we are dealing with fractional numbers and we are not sure how the Mayas handled them; and in the second place, while the average time of a lunation is very accurately known, there is a considerable variation from this average in the actual days from eclipse to eclipse. Looking over tables of successive eclipses we find that the distance representing six lunations may be as small as 176 days or may be as large as 179. No series has been included in this list of fifty-five where the end of the lunation as stated by the series differs by more than three days from the end of a lunation as computed from 9.16.4.10.9, and in only three of the

TABLE I
DATES IN COMPLETE AGREEMENT

1	2	3	4	5	6	7	8	9	10	11
No.										
2 Uaxact 3	9.3.13.0.0	5	2		150	9.3.12.10.10	450	451	510	
3 El Pab. 1	9.10.0.0.0	5	8		156	9.9.19.10.4	404	404	345	
4 Altar de S. 4	9.10.3.17.0	4	11		129	9.10.3.10.11	291	290	349	
5 Ixkun 2	9.17.9.0.13	3	5		94	9.17.8.13.19	39	39	500	
6 Ixkun 1	9.18.0.0.0	6		4	24	9.17.19.16.16	416	417	328	
7 Chic. Itz.	10.2.9.1.9	5		5	173	10.2.8.10.16	96	98	500	
9 P. N. 25	9.8.10.6.16	3	3		92	9.8.10.2.4	204	204	174	
11 P. N. 36	9.10.6.5.9	4	4		122	9.10.5.17.7	107	107	166	
12 P. N. L2	9.11.6.2.1	5	19		167	9.11.5.11.14	434	434	3	
14 P. N. 3	9.12.2.0.16	2		7	86	9.12.1.14.10	10	11	11	
15 P. N. 6	9.12.15.0.0	4		5	143	9.12.14.10.17	457	459	518	
16 El Cayo, Lin.	9.16.0.2.16	2		3	62	9.15.19.17.14	74	74	163	
18 Yax. 6	9.11.3.10.13	2		6	85	9.11.3.6.8	128	128	157	
19 Yax. Alt. 44	9.12.8.14.1	4		7	145	9.12.8.6.16	296	296	325	
20 Yax. L 29	9.13.17.12.10	5	15		163	9.13.17.4.7	287	289	348	
22 Yax. L 98	9.15.6.13.1	5	11		159	9.15.6.5.2	342	343	343	
27 Pal. T. C.	12.19.13.4.0	2	5?		64	12.19.13.0.16	256	255	255	
28 Pal. T. S.	1.18.5.3.6	4		6	144	1.18.4.14.2	402	402	520	
29 Pal. T. F. C.	1.18.5.4.0	5	10		158	1.18.4.14.2	402	402	520	
31 Pal. St 1	9.12.6.5.8	1	19		49	9.12.6.2.19	19	19	509	
33 Nar. 24	9.12.10.5.12	1	18		48	9.12.10.3.4	424	423	512	
34 Nar. 29	9.12.10.5.12	6	19		19	9.12.10.4.13	453	453	512	
35 Nar. 23	9.13.18.4.18	1	15		45	9.13.18.2.13	93	94	153	
36 Nar. 30	9.14.3.0.0	4	4		122	9.14.2.11.18	158	157	157	
37 Nar. 13	9.17.10.0.0	4		7	145	9.17.9.10.15	335	335	335	
39 Nar. 8	9.18.10.0.0	2		1	80	9.18.9.14.0	320	320	349	
40 La Hon. 7	9.17.0.0.0	3			89	9.16.19.13.11	431	431	520	

fifty-five is the variation as much as three days. The fact that eighty percent of the sixty-nine series state that the end of a lunation was within a day or two of the same date where we compute a lunation seems to me satisfactory proof that our interpretation has been correct and it probably warrants us in making slight corrections where needed in the case of some of the fourteen series which do not agree. Table II lists eight of these series in which a slight change from the apparent readings brings about a complete agreement. This Table is formed in the same way as Table I, and the columns are numbered the same excepting that two additional columns, 12 and 13, are added giving the apparent reading of D and E on the monuments.

TABLE I (CONTINUED)

1	2	3	4	5	6	7	8	9	10	11
No.										
41 Quir. E W	9.14.13.4.17	3	7			96	9.14.13.0.1	241	242	331
42 Quir. S	9.15.15.0.0	1	5			35	9.15.14.16.5	325	325	325
43 Quir. H	9.16.0.0.0	5	5			153	9.15.19.10.7	447	446	505
44 Quir. J	9.16.5.0.0	6	4			4	9.16.4.17.16	316	316	346
45 Quir. F.	9.16.10.0.0	6				0	9.16.10.0.0	40	38	8
46 Quir. D W	9.16.13.4.17	4		4		142	9.16.12.15.15	35	32	2
47 Quir. D E	9.16.15.0.0	1				30	9.16.14.16.10	250	250	161
48 Quir. E E	9.17.0.0.0	2				59	9.16.19.15.1	461	461	520
49 Quir. A	9.17.5.0.0	2		8		87	9.17.4.13.13	153	153	153
51 Quir. G	9.17.15.0.0	5		3		171	9.17.14.9.9	29	29	519
59 Copan 7	9.9.0.0.0	1	13			43	9.8.19.15.17	77	75	164
61 Copan P	9.9.10.0.0	3	9			98	9.9.13.2	502	502	500
63 Copan 12	9.10.15.0.0			3		3	9.10.14.17.17	237	236	176
65 Copan 10	9.10.19.13.0	6		3		23	9.10.19.11.17	357	357	328
66 Copan 19	9.10.19.15.0	1	4			33	9.10.19.13.7	387	387	328
68 Copan 13	9.11.0.0.0	3	5			94	9.10.19.13.6	386	387	328
70 CopanAlt.St.5	9.11.15.0.0	3		8		117	9.11.14.12.3	43	43	504
71 Copan 1	9.11.15.14.0	5	12			160	9.11.15.6.0	280	283	165
72 Copan 1	9.12.3.14.0	4				118	9.12.3.8.2	82	82	171
73 Copan Alt.II ¹	9.12.8.3.9	5		2		170	9.12.7.12.19	59	57	518
74 Copan 6	9.12.10.0.0	?		2		22	9.12.9.16.18	338	336	336
75 Copan J	9.13.10.0.0	1	18			48	9.13.9.15.12	232	231	172
77 Copan A	9.14.19.8.0	6	15			15	9.14.19.7.5	465	463	2
79 Copan M	9.16.5.0.0	5	5			153	9.16.4.10.7	167	169	169
80 Copan N	9.16.10.0.0	1				30	9.16.9.16.10	10	8	8
81 Copan K	9.12.16.7.8	2				59	9.12.16.4.9	9	9	499
82 Copan D	9.15.5.0.0	2	9?			68	9.15.4.14.12	332	331	331
84 Nar. 22	9.12.15.13.7	1		9		58	9.12.15.10.9	289	292	351

The changes made in Table II, it will be noticed, are as follows: In Nos. 13 and 76 an apparent reading of 8D was changed to 8E. In Nos. 17, 21, 24, 25 and 26 apparent readings of 7E was changed to 7D; 8E to 8D; 12E to 12D, and 3E to 3D. These changes account for seven of the eight series. It is possible in some cases there was an error on the part of the sculptor, but it seems to be more likely, particularly in the last five cases which are all at Yaxchilan, that we are not fully clear as to the forms used for Glyph D and Glyph E at that place, and that we have misread the glyphs. The other change is in No. 23 where 14E is changed to 9E, and this is probably an error on the part of the sculptor in adding one bar too many. According to our interpretation it will be noticed E can never have a coefficient higher than 9.

This leaves us a net residue of six series out of the sixty-nine which cannot be brought into agreement. They are Nos. 1, 8, 53, 54, 56 and 58. Of these six numbers, 1 and 58 are series on two of the oldest monuments of the whole eighty-four, and it may

TABLE II
DATES WITH SLIGHT CORRECTIONS NEEDED

	1	2	3	4	5	6	7	8	9	10	11	12	13
No.													
13	P. N. 1		9.12.2.0.16	3	8	117	9.12.1.12.19	499	501	11	8		
17	Yax. L 21		9.0.19.2.4	3	7	96	9.0.18.15.8	348	348	348		7	
21	Yax. L 26		9.14.8.12.0	4	8	126	9.14.8.5.14	114	115	174		8	
23	Yax. L 46		9.15.14.8.14	3	9	117	9.15.14.2.17	57	57	518		14	
24	Yax. 11		9.16.1.0.0	4	12	130	9.16.0.11.10	310	310	340		12	
25	Yax. 11		9.16.1.0.0	5	12	160	9.16.0.10.0	280	281	340		12	
26	Yax. 1		9.16.10.0.0	1	3	33	9.16.9.16.7	7	8	8		3	
76	Copan 5		9.13.14.0.15	3	8	117	9.13.13.12.18	58	58	519	8		

TABLE III
DATES WHICH DO NOT AGREE WITH READING

	1	2	3	4	5	6	7	8	9	10	11	Difference
No.												
1	Tikal 3		9.2.13.0.0	3	17	106	9.2.12.12.14	54	64	5	10 days	
8	Holactum		10.8.15.4.9	2	2	61	10.8.15.1.8	388	397	338	9	"
53	Quir. P.		9.18.5.0.0	4	3	121	9.18.4.11.19	39	50	511	11	"
54	Quir. I.		9.18.10.0.0	2	6	65	9.18.9.14.15	335	349	349	14	"
56	Quir.Str. 1		9.19.0.0.0	4	2?	120	9.18.19.12.0	240	254	165	14	"
58	Copan 9		9.6.10.0.0	5	5?	153	9.6.9.10.7	167	174	174	7	"

easily have been that some change occurred, or some days were added or dropped before uniformity was reached about the year 9.9.0.0.0. One other series, No. 8, is the very latest one of the whole 84 at Holactun. It is possible that some change was made before the date of that monument, or it is also possible that the Initial Series has not been correctly read. The last three which do not agree are Nos. 53, 54 and 56. If we add to these Nos. 52 and 55 which were in our class of incomplete, we have the five latest series at Quirigua. All of these last four or five dates at Quirigua are indicated as falling twelve or thirteen days earlier than the dates we compute. Every dated monument at Quirigua up to the year 9.18.0.0.0 is in excellent agreement with our computed dates. After that there is absolutely no agreement in the remaining four or five.

This covers the discussion of Glyphs C, D and E, and I think evidence points rather clearly to the reading of C, D and E as given above. At least in the great majority of cases the date when a moon group ended as given by the Supplementary Series when so read agrees as nearly as we could expect it to with the date when a lunation would have ended, provided we assume that a lunation ended on 9.16.4.10.9 or possibly on the day before it, 9.16.4.10.8.12 Lamat, which it will be remembered is the date very prominently mentioned on page 52 of the Dresden Codex. On the other hand, the division of the months into groups of five and six is not the same in the inscriptions as it is in the Dresden Codex, in fact it seems to differ in one city from another and even in the same city at different times. I have not yet been able to determine what the system is, or whether there ever was a uniform system.

The above computations have been made on the basis of a moon group ending on 9.16.4.10.9.13 Muluc. Computing from this would show another moon group ending on 9.16.0.4.4.8 Kan. I feel pretty sure that somewhere between that day, 8 Kan, and the third day later, 11 Manik, a new moon or whatever phase of the moon the Maya observed, did occur. I feel reasonably sure, also, that the Maya computed 405 moons as exactly 46

tzolkin and consequently they thought a new moon occurred somewhere between four and seven days after the original 4 Ahau 8 Cumhu, i.e. between the days 8 Kan and 11 Manik.

Regarding the late Quirigua dates which do not agree, the simplest explanation is that they put Pop in order, i.e. made some change in their calendar just before 9.18.0.0.0., the date given for this event in the Books of Chilan Balam being in fact 9.17.0.0.0.

NEW YORK CITY

SYMPATHETIC MAGIC AND WITCHCRAFT AMONG THE BELLACOOOLA

By HARLAN I. SMITH

MANY OF the Bellacoola Indians today believe in sympathetic magic and witchcraft, after over a hundred years of contact with white men. Most of them live within hearing of the bells of the mission church, and the government school. Not a few of the men take logging contracts; some of them build and operate motor boats; many of them join the fishing fleets of the salmon canneries; most of the women work in the canneries; and all deal at the white men's stores.

The Bellacoola lived at the heads of the long inlets half way up the Pacific Coast of Canada and in the tributary Bella Coola valley. Now, numbering perhaps two hundred and fifty, they, with the exception of a few families, are concentrated on one reservation at the mouth of the Bella Coola river. The Bella Coola valley has been called the Norway of Canada. This was where Sir Alexander Mackenzie, the first white man to cross Canada overland, reached the sea.

Aboriginally, the Bellacoola were of the North Pacific Coast culture of America, which is characterized by the extensive use of red cedar and sea products, particularly salmon, the making of graceful, sea-going canoes, each hewn from a single cedar, the erection of large rectangular houses made of cedar planks, with carved house posts and totem poles, lack of pottery, and expertness in carpenter work, carving, and painting. This culture belongs to the barefoot area, but the Bellacoolas wore moccasins to a certain extent. The art of the area was that best known from the paintings and carvings of the totem poles, largely of conventionalized animal forms. The life centred around a very highly developed social organization, an extensive and powerful financial system, and property rights to names, rituals and honors. The Bellacoola language is one of the Salish linguistic stock. They

are apparently more recent comers to the coast than their neighbors and have not fully adopted this coast culture.

The following examples of sympathetic magic and witchcraft, collected during 1920 to 1923 among the Bellacoola, illustrate the extent of their belief in this direction.

Most of this information was given me by the late Captain Schooner, born about 1848, and Joshua Moody, born about 1868, both apparently full-blood Bellacoola Indians. Neither of them spoke English and both gave me the data in Chinook jargon, which I have endeavored to interpret and arrange in logical order, but have tried to render in as nearly as possible the Indian mode of thought, feeling and expression. Schooner was a pagan gentleman. Joshua has great knowledge of plants and animals, and is a Bellacoola scientist, but his great ambition and jealousy, combined with his disloyalty in giving up his own people's customs and adopting a very thin veneer of Christianity, color his statements relating to beliefs, although his plant and animal data have always withstood cross examination and comparison with the data supplied by other Indians. Alec Davis and Mrs. Willie Mack told of the toad. They do not talk English and spoke to me in Chinook jargon. Only the accounts about the grizzly bear skin and the bracelet of beaver skin, which were given me by Mrs. Stoessiger, were told in English.

The material was not given as accounts of magic or witchcraft, but rather as part of the data regarding the properties of plants and animals of which I was endeavoring to collect as complete information as possible.

Joshua, who is even younger than Captain Schooner, remembers the time when Mr. John Clayton was the only white man living in the Bella Coola valley, and when they saw only one other white man every year or two. Consequently these men remember the old Bellacoola beliefs before they were much, if at all, affected by European ideas.

It will be noticed that magic among the Bellacoola is considered of use both for beneficial and injurious purposes, and that the materials giving effect to it are of both plant and animal origin.

The beneficial purposes include: making a child grow up to be a good dancer, industrious, a swift berry picker, or a strong man; curing lung trouble; making the river erode where wanted; and two ways of stopping rain. The injurious purposes include: two ways of making a person grow up to be a thief; the causing of craziness and quarrelsomeness and the three ways of causing death.

The materials and actions used include: ashes of aspen leaves; a dead toad, used with hair, with a red cedar bark face wiper, and with lost pieces of thimble berry shoots which were accidentally dropped while being eaten; ashes of a yellow jacket's nest; a living raven with phlegm; beaver paws, in two instances; a skin bracelet from a beaver's foreleg; a dead wood-rat; a dead mouse; a grizzly bear's skin; a living red squirrel with a bit of apron fringe; setting fire to a wood-rat's house; and poking an ant hill.

To make a person a good dancer the ashes of the burned leaves of the aspen or trembling poplar were said to be useful, but Joshua said this may have been a joke. The Bellacoola Indians say the leaves dance. They never say that they tremble. When a baby was born, if the parents talked about it and the father desired that the baby grow up to be a good dancer, the mother or father got the leaves, burned them and put the ashes on the baby's hands, knees and elbows. When telling of this Joshua held his hands with the finger tips up and moved them as the Bellacoola do in dancing. Both rich and poor men danced.

A baby girl would grow up to be industrious, it was believed, if the warm limbs of a recently dead beaver were applied to her. The Bellacoola apparently observed the great industry of the beaver.

To make a baby girl grow up to be a fast berry-picking woman, the ring of skin from between two cuts around a beaver's foreleg was put on her wrist and was left on until it wore off.

To make a boy grow up to be a strong man, a skin of the grizzly bear, was thrown over him, generally by his father.

For phlegm on the lungs, more permanent than a simple cold, the patient expectorated in something and some one secretly mixed the fresh phlegm with salmon eggs and put the mixture

out for the ravens to eat. This was done four times, and if a raven ate it, the patient recovered, according to Captain Schooner's belief. As the call of the raven sounds somewhat like a person affected with phlegm in the throat, this may be a case of sympathetic magic, at any rate it is one of witchcraft.

To make the river erode at a certain place in order to break a log jam, a beaver's foot was buried in each of several spots in the place.

A continuous rain would cease, and the sun would come out, it was said, if the people set fire to a wood-rat's house.

When it rained too much the Bellacoola Indians poked down an ant hill and said, "Give us warm sunshine." They believed this would bring results, but now that Joshua is a Christian he says he does not believe it and says it is useless party talk.

Bad boys or girls, but not adults, would take a dead mouse, warm it over a fire, and rub the warmed mouse on the hands of a baby. This made the baby steal when it grew up. The so-called stealing habits of the mouse were supposed to be transferred to the child.

The still warm body of a freshly killed wood-rat was used in the same way to make a baby, boy or girl, "crazy," and grow up to be a constant thief. The notorious habits of the wood-rat, as well as those of the mouse, were evidently well recognized by the Bellacoola.

To make people crazy, the red squirrel had to be properly used by a shaman and then it possessed strong power. One woman who had been made crazy in this way died in 1887. She did not like the shaman and he did not like her. He stole her apron. She was sorry. He took it into the forest and performed witchcraft because he wanted to spoil her life by making her crazy. He caught a red squirrel alive, possibly in a little basket. He had a box called a "bad box," in which he kept his things of evil power. He put some of the fringe of her apron around the red squirrel and let it run far away. The woman then became crazy and sometimes fell down, but part of the time she seemed well. My Indian informant, Joshua, had seen her. This example of sympathetic

magic probably originated from observing the many very erratic and apparently purposeless movements of the red squirrel.

When one wished to cause the child of one's enemy to grow up to be a quarrelsome person, a yellow jacket's nest was burned and the ashes were rubbed on the face, hands, and arms of the child. When the child grew up, it was believed, he or she would fight with everyone. The yellow jacket's natural defense of its nest is interpreted as quarrelsome, even by white people.

The toad was a powerful medicine for the bad box used in witchcraft.

To make a man or woman die of craziness, one of the hairs of the person's head was put in the body cavity of a disemboweled toad.

To make a person's face swell and supurate until death came, the little pieces of softened red cedar bark used to clean the person's face were put in the body cavity of a disemboweled toad. The idea underlying this was probably the reproduction of the warts of the toad on the face of the person.

To make a person die, a piece of the young shoot of a thimble berry, lost by that person while eating, was put in the mouth of a toad. Death was supposed to take place in half an hour.

One very old man, Judas by name, boasts of having killed seven people by means of his bad box used in witchcraft, especially of having caused the death of Mr. John Clayton, who was the first white man to remain long in this area, having kept the Hudson's Bay store at Bella Coola, and later a store of his own, but who died far away from Bella Coola in 1909.

Mrs. Samuel King who died in 1922 was said to have been poisoned by Willie Mack. Her father, Captain Schooner, was said to have stated that Willie would die in July on the anniversary of her death. Willie Mack died in the summer of 1923. Captain Schooner died a few days later. He was said to understand malevolent witchcraft thoroughly. It was said that people often cut off the collars of Willie Mack's shirts. Willie Mack's father was too great a chief so that people were ashamed, and consequently killed Willie by means of witchcraft with something in a bad box.

Charlie West, a Carrier Indian from Ulkatcho, believed that Mrs. Samuel King had been killed by Willie Mack's witchcraft. Alexander Cleleman, a Bellacoola Indian, believed that Willie Mack had been killed by Captain Schooner's witchcraft in revenge for his daughter's death, and that Captain Schooner died of witchcraft on the part of Willie Mack.

That Sir Alexander Mackenzie, the first white man to visit the Bellacoola, performed acts of witchcraft on the beach, was strongly asserted by Joshua, who would not believe me that Mackenzie was probable taking observations, determining his geographical position.

NATIONAL MUSEUM OF CANADA,
OTTAWA.

CERTAIN MORTUARY ASPECTS OF NORTHWEST COAST CULTURE

WILLIAM CHRISTIE MACLEOD

THE INCIPIENT SUTTEE

NO MORTUARY immolation of widows obtained on the aboriginal North American northwest coast. What I propose to discuss under the above heading is what Tylor, with a too careless glance at some of the data, explained away as a "mitigated survival" of widow burning.¹

The three peoples among whom what I shall call an "incipient suttee" obtained are the Carriers, the northern Kwakiutl, and the Sikanni. The practice was bound up with the practice of cremation, and as we shall show in another connection, cremation was certainly diffused to these peoples from the Tsimshian. Neither for the Tsimshian nor others of the cremating coast tribes do we have adequate data on the practices attending cremation, and to what extent the custom described for Carrier and Kwakiutl has been a borrowing from the Tsimshian can not be finally decided. But it is impossible that the Carrier and Kwakiutl independently evolved the practice, and improbable that they borrowed from each other. The common centre of distribution of the trait then may have been the Tsimshian, and presumably the practice obtained among the Tsimshian. As for the Sikanni, Harmon makes it clear that they borrowed the practice from the Carriers.²

¹ W. Tylor, *Primitive Culture*, 1900.

² A. G. Morice writes as if the trait were characteristic of all the Western Dene, but confessedly his knowledge was really limited to the Carriers. (*The Western Dene*, 1890 Proceedings of the Canadian Institute.) Mac Gillivray, an old fur trader, in a letter written to Cox and published by him, in describing the widow torture of the Carriers at Alexandria says that the custom was "quite peculiar to this tribe," intending apparently to exclude the Chilcotin. (See R. Cox, *Adventures on the Columbia*, 1831, v. 2, p. 387.) Morice again says that the Carriers borrowed Tsimshian "cremation, with its attendant practices, ceremonial mourning, and the enslaving of widows." (Morice, *The Western Dene*, Summary Report, Canadian Geological Survey, Anthropological

Simpson, MacGillivray, and Morice are our only sources of data on the suttee practice of the northwest coast; the meagreness of the data and its importance for comparative uses makes it advisable that the facts be surveyed in full. Morice was evidently acquainted with MacGillivray's writing, but his own notes show that he had independent sources of information.

Morice writes that after a death among the Carriers, the body was removed from the house and put under a roof-like shelter made of bark; the widow (or widower, as the case may be), and her children, then erect a small hut of similar materials beside this, and live in it. The cremation did not take place until the heir had assembled enough wealth to potlatch, the first mortuary or ascension potlatch of the Carrier series taking place usually on the evening after the cremation. MacGillivray, writing specifically for the Alexandrian Carrier group, says that the widow must lie beside the dead body, in the house, for nine days, from sunset to sunrise, after which nine days the body is cremated.³

Prepared for cremation, the body is put on a pyre which is built in some elevated place. "During the process of burning," MacGillivray writes, "the bystanders appear to be in a high state of merriment. If a stranger happen to be present they invariably plunder him; but if that pleasure be denied them they never separate without quarreling among themselves." I think it is

Section, 1905, p. 199.) This, I believe, however, is merely a deduction without a knowledge of the "attendant practices" among the Tsimshian. For the eastern Dene we have Morice's note to the effect that with the non-cremating Sikanni "Bondage consequent upon widowhood was not practiced . . ." (*The Western Dene*. Proceedings of the Canadian Institute, 1888, p. 146.) But in Harmon's time Sikanni practice was the same as that of the Carriers. (See Harmon, *Journal* 1791, Reprint, 1906, pp. 161, 163, 180.)

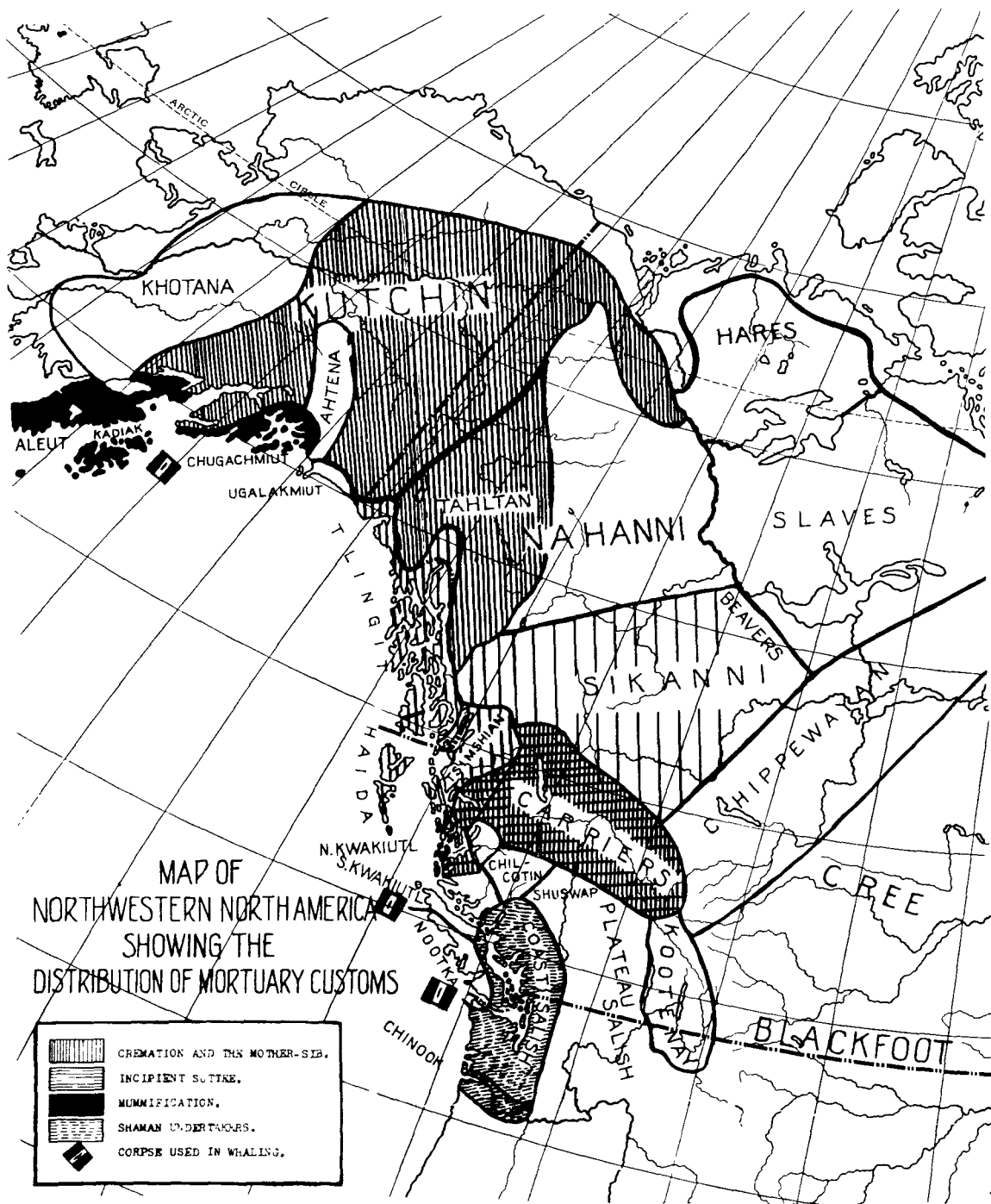
³ Morice, 1890, p. 144; Cox, v. 2, p. 387, seq. Among the Kutchin of Alaska, the body is exposed outdoors for one year; the widow has to remain near it in order to protect it from beasts of prey. When only bones are left, they are burned; the ashes are put in a package on the top of a pole, which done, the widow's mourning period is ended. The release of the widow comes with the potlatch which celebrates the raising of the mortuary pole. (S. Jones, *The Kutchin Tribes*, p. 326; and W. L. Hardisty, *The Loucheux*, p. 319; both articles are in the 1866 Annual Report of the Smithsonian Institution.) It would seem that among the plateau Athabascans or Dene the necessity of saving wealth for the initial potlatch lengthened the period of waiting prior to cremation. For the Kutchin the waiting period is about a year.

questionable if this is in any way ceremonial. MacGillivray continues: "If the doctor who attended him *has escaped uninjured*, he is obliged to be present at the ceremony, and for the last time tries his skill in restoring the defunct to life." Failing in this the shaman throws "a present" on the burning body, "which in some measure appeases *the resentment of the relatives*, and preserves the unfortunate quack from being maltreated."

The same resentment of the relatives who in this case evidently suspect the shaman of delinquency, appears as a cause in the mistreatment of the widow who also seems to be open to suspicion as contributory at least to the death of her husband. "While the doctor is performing his last operation she must lie on the pile, and after the fire is applied she cannot stir *until the doctor orders her to be removed*, which is, however, never done until her body is completely covered with blisters. After being placed on her legs, she is obliged to pass her hands through the flames gently and collect some of the liquid fat which issues from the corpse, with which she is permitted to wet *her face and body*."⁴

"When the friends of the deceased observe the sinews of the legs and arms beginning to contract they compel the unfortunate widow to go again on the pile, and by hard pressing, *to straighten these members*. If, during her husband's lifetime, she has been known to have committed any act of infidelity, or omitted administering to him savory food, or neglected his clothing, etc., she is now made to suffer severely for such lapses of duty *by his relations*, who frequently fling her into the funeral pile, from

⁴ Dall writes that at a Tlingit cremation, the relatives of the deceased "sometimes *burn their hair in the fire* or cut it off and smear themselves with ashes." Dall seems to imply that *instead* of this the Kaigani Haida "cut themselves with knives and stones." (W. H. Dall, *The Native Tribes of Alaska*, Smithsonian Contributions, 1877, p. 417.) Moreover Dall seems to mean by relatives only those who are included in the clan of the father of the deceased, who do the mortuary duties; it would seem that they did not even include the widow. Niblack cites a newspaper account of 1866 which says that during a Tlingit cremation the widow is in a partly covered earth hole some thirty or forty feet away from the pyre, surrounded by women friends who "cleanse her" that she may be ready again for marriage. A. P. Niblack, *The Coast Indians of Southern Alaska and Northern British Columbia*, Annual Report of the Smithsonian Institution, Part 2, 1888.)



which she is dragged by *her friends*, and thus, between alternate scorching and cooling, she is dragged backwards and forwards until she falls into a state of insensibility." Of this phase Morice says that the widow was "obliged by custom to embrace the remains of her late husband, even though surrounded by flames When momentarily withdrawn by the bystanders, *etiquette demanded from her repeated endeavors to burn herself along with the remains.*" If the widow had not been a faithful and attentive wife, Morice says, "she was in many cases jostled by the mourners and sometimes horribly disfigured with a view to diminishing her chances of remarriage."

After cremation, the widow rolls up the larger of the charred bones, and for several years carries them in a package on her back. She is treated "as a slave" by the women and children of the village, and tends the grave in which her husband's ashes are buried. Her husband's relatives are especially cruel to her. To these notes of MacGillivray's we add Morice's observation that the widow had to live in a bark hut on the site where the pyre had stood all during her mourning or bondage period. It is the brothers and sisters of the deceased who are the widow's "guardians" and who treat her cruelly.

After three or four years the widow's mourning period is concluded by an inter-village festival at which, says MacGillivray, "Presents are distributed to each visitor." This is merely the potlatch given by the heir of the deceased when he assumes the rank of his predecessor. In the ceremony, says Morice, the heir says to the widow: "I hereby liberate you, so that you may return to your kindred and marry if you please."

MacGillivray writes that, "The wretched widows, to avoid this complicated cruelty, *frequently commit suicide.*" After her mourning period a widow may marry again, "but few of them, I believe, wish to encounter the risk attending on a second widowhood."

Perhaps the most remarkable feature of all this, and one easily overlooked as it was by Tylor, is that, in MacGillivray's words, "*The men are condemned to a similar ordeal*, but they do not bear it with equal fortitude, and numbers fly to different quarters to

avoid the brutal treatment which custom has established as a kind of religious rite." Morice affords more details, noting that "Men, though reduced to a *modified bondage* during the mourning period for their wives," did not have to carry about the package of bones of the deceased. And again, he notes, that "Men who had lost their wives were obliged to undergo the same ordeal, though treated somewhat more humanely than the weaker sex."⁵

All we have on this subject for the Kwakiutl is the brief note by Simpson on the Kwakiutl of MacNiell's harbor, the northern boundary of the Ft. Rupert Kwakiutl. Simpson writes that "the corpse having been kept *for several days*, is consumed by fire, while the widow, if any there be, rests her head on the body, until dragged from the flames rather dead than alive *by her* relatives." If she recovers from the effects, she must carry her husband's ashes for three years, meantime being treated as an outcast.⁶ Evidently this is a passing impression of the practices described for the Carriers.

We seem to have here a tendency towards the mortuary burning of both widower and widow. The relatives of the deceased appear to be inclined to throw the survivor into the flames while the relatives of the widow or widower strive to save them. The fact that certain post-cremation duties await the survivor may be considered as tending to prevent actual immolation.

Such seems to be at least in part the content and tendency of the practice. But the Carriers and Kwakiutl were using a borrowed practice and may have changed the content. So what ideas underly the custom in its centre of origin we cannot tell. The fact that the widower is accorded the same treatment makes it very unlikely that we have a case of "mitigated survival" of mere widower immolation.

This mortuary treatment of both widow and widower on the northwest coast raises the question of the origin of the Natchez custom of strangling both widower and widow upon the death

⁵ In the above the italics are my own. The quotations are from Cox, v. 2, p. 387 seq.; and Morice, 1890, p. 145 seq. and p. 152. Harmon also notes among Sikanni the same hostility to a widow who has been a bad wife.

⁶ G. Simpson, *Narrative*, 1841, p. 114; cf. p. 129.

of husband or wife, a custom which has apparently had a marked effect in making Natchez social organization so strange and interesting. The Natchez culture appears to be the only one of the world's cultures with this custom of dual immolation, or with the obligatory and general immolation of widowers. If we consider it improbable that Natchez and the British Columbia tribes have obtained their practices, long since, from a common point of diffusion, it may still be thought that perhaps the causes of their unique practice may have been the same, lying chiefly perhaps in the importunity of the relatives of the deceased who suspect everyone of the sorcery supposed to have caused the death of the deceased, and who are eager for revenge.⁷

CREMATION

1. On the northwest coast the practice of cremation, and the mother-sib, have virtually the same distribution. The use of the labret attained almost the same distribution. On the coast cremation was practiced by the Tlingit, Tsimshian, Haida, and northern Kwakiutl;⁸ on the plateau it was practiced by the Tahltan (western Nahanni), the Kutchin (or Loucheux), the Carriers, and the Sikanni (western Beavers). The use of the labret, cremation, and the mother-sib, mark off the three northerly peoples of the coast as a distinct sub-culture from the head-flattening, non-cremating, and sibless southern Kwakiutl, Nootka, and coast Salish to the south of them.

It is eminently probable that the sib on the coast had a single centre of origin; the same is no doubt true of cremation. There is no reasonable doubt at all that the sib and cremation of the plateau tribes is the result of diffusion from the coast tribes. If the sib,

⁷ For the Natchez see J. R. Swanton, *Indian Tribes of the Lower Mississippi*, Bulletin, Bureau of American Ethnology, 1911; W. C. Mac Leod, *Natchez Political Evolution*, American Anthropologist, 1924, and W. C. Mac Leod, *The Origins of the State*, Philadelphia, 1924. In the present paper the writer does not intend to touch on the phenomena of the Southeast beyond the above suggestion; the eastern and southeastern data will be considered comparatively in another study.

⁸ On the northern Kwakiutl, besides Simpson, see A. MacKenzie, *Voyages*, 1789, Reprint, 1903, v. 2, pp. 262, 312. Cf. Boas, *Notes on the Ethnology of British Columbia* Proceedings of the American Philosophical Society, 1888, p. 427.

cremation, and the labret were not evolved on the coast, but introduced from elsewhere, it would be interesting to eventually discover if these three rather unrelated traits were brought in from the same contactual source.

There is now little doubt that the Salish peoples of the coast, and perhaps the Kwakiutl and Nootka, are much more recently come to the coast than the more northern tribes, the Salish having penetrated down the Frazer and across the Sound to Vancouver Island.⁹ Whether the sib was a trait of the culture of the tribes living on the coast in the territory now occupied by them we can never know, but archeological evidence indicates definitely that cremation and the labret very anciently obtained on some sections of the coast about as far south, at least, as Puget Sound.¹⁰ One is inclined to think that cremation, the labret, and the mother sib of the northern coast were once linked up with the same traits in other American cultures, probably to the south. Such a detail as the Tlingit purification of the widow during cremation, even, suggests far southerly connections.¹¹ A glance in the direction of Siberia, from whence have come many traits of northwest coast culture, makes it very doubtful if cremation reached our coast from that direction. Some of the paleo-Siberian peoples practice cremation, while the neo-Siberians in contact with the paleo-Siberians do not practice it. The paleo-Siberian practice may be of American origin; the tribes involved were formerly in closer contact with the cremating American tribes than they are now.¹²

⁹ Cf. for example, T. T. Waterman, *Some Conundrums of Northwest Coast Art*, American Anthropologist, 1923, and Mac Leod, *The Origin of the State*, 1924.

¹⁰ Cf. C. Hill-Tout, *Summary of the Archeology of the Frazer Delta*, p. 446, 1902, Annual Report of the British Association for the Advancement of Science. Hill-Tout observes that whatever doubt there may be about the mainland, "there is no doubt that cremation was practiced by the island moundbuilders." Also H. L. Smith, *Archeology of the Gulf of Georgia and Puget Sound*, and *Archeology of the Frazer Delta*; both in v. 2 of the reports of the Jesup Expedition, American Museum of Natural History.

¹¹ See above, p. 124, J. n. 4, which may be compared with the purification of a girl at puberty in southern California, described in H. N. Rust, *Mission Indian Maturity Ceremonial*, American Anthropologist, 1893. (The girl is put in a pit, and women around purify her.)

¹² Cf. the evidence of mythology in Bogoras; *The Folklore of Northeastern Asia and Northern North America*, American Anthropologist, 1902.

But none of the details of their mortuary ceremonies aside from the mere fact of burning the corpse on a pyre indicates any genetic connection.¹³

2. Cremation on the northwest coast was not the fate of all corpses. Even the ceremony of cremation had elements suggestive of survival of former burial.

With the Tlingit, Haida, and Tsimshian, at least, before cremation the corpse is put into a box, in which it is burnt on the pyre, and this box has a hole cut in the bottom. The heart of the dead person is first taken out and buried.¹⁴

Among these three coast tribes at least, furthermore, shamans were never cremated. For the Tlingit at least we have the rationalization of this to the effect that "their bodies have never been burnt for the reason that it is a common superstition that fire will not touch them."¹⁵ Shamans, furthermore, were never buried in family grave houses like others who were not cremated, and were not confined like others. They were put, without coffin, in small grave houses, alone, situated in isolation at some lonely headland or such, which spot was often chosen by themselves before death. The type of the shaman's gravehouse was uniform among the three coast tribes, and so it was "from time immemorial;" except that while the Tlingit made the house of logs, the other two peoples used planks, as in their dwellings. The shaman's corpse, as was the case with all corpses from the Eskimo to the Salish of the coast, inclusive, was placed in a sitting position, that is, knees to chin; but among the Tlingit the shaman's corpse

¹³ The Gilyak, Koryak, and Chukchee cremated; the Ainu, Kamchadal, and Yukaghir,—all paleo-Siberians, did not. The Tungus and the Yakut are the neo-Siberians referred to. See M. A. Czaplicka, *Aboriginal Siberia*, 1914.

¹⁴ See Niblack, op. cit., and F. Boas, *First General Report*, British Association for the Advancement of Science, 1889, p. 837. Boas observes the native rationalization that if the heart is not removed and buried, "all the relatives would die." Note in contradistinction, that among the Tsimshian, when the body is to be preserved for a time and buried instead of burnt, the "viscera" are removed and *burnt*. See below, p. 132. Of perhaps related cardiac features we note on the Columbia that for all salmon—not only the first of the season—"the heart they broil and eat, but will not eat it after sunset." (J. G. Swan, *The Northwest Coast*, 1869.)

¹⁵ Niblack, op. cit., Part 12.

was laid on its side while with the other two peoples it sat up like other corpses.¹⁶

3. Aside from the non-cremation of shamans' corpses, there were others not cremated.

For the Haida, Dawson writes of the extent of cremation, that it was, up until the middle of the nineteenth century "an occasional or not infrequent practice," "numerous instances" having occurred in the generation before his visit.¹⁷ All memory of the practice seems to have been lost a generation later when Curtis' visit took place, for he makes no note of such in his ample descriptions of Haida culture.¹⁸ Swanton is our only source of definite information as to who were cremated. He says that they burned the bodies of *those who died far away from home* and brought back the bones. Persons who died any *death by violence* were also cremated, whether at home or far away. Probably there were others cremated, also.¹⁹

For the Tlingit, Niblack writes: "The bodies of warriors killed in battle were formerly *cremated, the head being severed from the body and preserved* in a box supported by two poles over the box

¹⁶ Cf. Curtis, *The North American Indian*, v. 11, 1912, pp. 43-45, 126, p. 80; *ibid.*, v. 10, p. 53; Niblack, *op. cit.*, p. 357; W. H. Dall, *Alutian Cave Relics*, Smithsonian Contributions, 1878.

Niblack, *op. cit.*, affords the most data on shaman burial. G. Dawson, *Report on the Queen Charlotte Islands*, Reports of Progress, Geological Survey of Canada, 1879, affords supplementary data. Boas, *op. cit.*, 1889, states that shamans' bodies were buried in caves or in the woods. We read also of "The graveyard of the shamans." (P. 837, 843.) In F. Boas, *Tsimshian Mythology*, Annual Report of the Bureau of American Ethnology, p. 329, in a tale we read of a shaman who was cofined and put in a tree behind his own house. Boas, *op. cit.*, 1886, notes for the shaman burial of the northern peoples that "the corpse of the son is always deposited on top of the corpse of the father." (p. 427). (This is an exception to the general rule that persons of different sibs may not be buried together.)

Among the Buryat of southern Siberia, "The custom of burning, now restricted to dead shamans, was formerly general." The Buryats gave up general cremation under pressure of the Russian government. (Czaplicka, *op. cit.*, p. 152.)

¹⁷ Dawson, *op. cit.*, p. 132.

¹⁸ Curtis, *op. cit.*, v. 11, p. 126 seq.

¹⁹ J. R. Swanton, *The Haida*, Jesup Expedition, p. 54.

holding the ashes." (Old burials support this observation as to the severance of the head.)²⁰

Dawson tells us that among the Haida, persons who died by *drowning* are supposed to be taken possession of by an evil supernatural spirit who is chief of the lower regions—one Haidelana, whose representation is the killerwhale—and are turned into beings like himself and come under his chieftainship.²¹ For the Tlingit Swanton writes of persons drowned that they go to a third cosmical plane which is beneath the earth; *food sent to them was not burnt, but thrown into the sea.*²²

For the Haida Dawson writes that those killed in battle, even non-combatants accidentally killed during a fight, go at once to the country of Suniatlaidus, which is supposed to be a happy region. Swanton writes of the Tlingit that for those who died by violence there was a second plane or region called Kiwaa ("Way Up"), access to which the spirit could have only through a certain hole which was reached by a ladder; the hole was guarded by Djaqtaiqq, a human-shaped being, and the road to it was guarded by grizzly bears. Those who were slain and unavenged could not get up the ladder, but drifted by on the winds and with the clouds.²³

Dawson for the Haida writes that those who die from the natural course of nature or disease go to a neutral Hades, and are five times reincarnated in human life, after which they become

²⁰ Niblack, *op. cit.*, Part 12, very apparently taken from U. Lisiansky, *Voyage*, 1814, p. 24. There is no mention of any mummification of the head. The facts are interesting in connection with the head-taking in war prevalent along most of the northwest coast. Furthermore, there is the fact that the Tlingit at least *disjointed* the body preparatory to cremation at least. (Dall, *Alaska*, p. 417.) The disjointing is done in solitude by "a person who is assigned this special duty." This recalls the *dissection* of the body among the Chukchee and some Koryak where it is done "to find out the probably cause of death." (Czaplicka, *Siberia*) Jones, *op. cit.*, p. 327, says of the Kutchin, that "they have no knowledge of scalping," but, "when a man kills an enemy he cuts all his joints."

²¹ Dawson, *op. cit.*, p. 121.

²² J. R. Swanton, *The Tlingit*, 26th Annual Report, Bureau of American Ethnology, 1908, p. 430.

²³ *Ibid.*

annihilated, "like earth, knowing nothing."²⁴ Aside from persons drowned or dead by violence, among the Tlingit, Swanton writes, all others went after death to Sagiqawuani ("Ghost's Home") in which was Tahit ("Sleep House") where people rested. Sagiqawuani was a region lower than Kiwaa. Corpses of these persons were "*usually* burned so that the deceased might be near the fire in the Ghost's Home, otherwise (if not cremated) he had to remain far back in the house (Tahit) and shiver all the time no matter how many blankets he wore. Sometimes the body of a very brave man was not burned, because he was too valiant to stay around the fire like weak people. Other persons also might *prefer* to have their bodies sent away intact, but if a friend of one of them dreamed that the deceased had come to him and complained of being cold, his body was taken up and burned."²⁵ Niblack says that "It is believed among the Tlingit that the souls of those whose bodies are cremated will be very comfortable in the spirit world." Around Sitka cremation was from earliest times "the prevailing custom;" and in his day, Niblack writes, that among the northern Tlingit, (who were in most things the more conservative), cremation was still practiced to a considerable extent.²⁶

With the Tsimshian cremation was not universal. In the tales, in fact, there appears very little cremation,²⁷ yet cremation was probably rather general.²⁸ Among the methods we note is one described by Boas' informant who states that in olden times bodies of chiefs and especially dear ones were eviscerated and the viscera burnt, the body being filled with cedar bark to be preserved for a time, finally to be confined.²⁹

²⁴ Dawson, op. cit., p. 121.

²⁵ Swanton, *Tlingit*, p. 461.

²⁶ Niblack, op. cit., p. 354.

²⁷ Boas, *Tsimshian Mythology*; see tales on p. 266, 214, 337, 203, 73, 233, 264. On p. 214 we read of a queen who asked that her body be not cremated, while on p. 266 we read of a princess cremated.

²⁸ Cf. L. Shortridge, *A Visit to the Skeena Indians*, University of Pennsylvania Museum Bulletin, 1919, p. 125.

²⁹ Boas, *Tsimshian Mythology*, p. 337, n. 1.

For the Alaskan Kutchin little is to be learned. Hardisty mentions both cremation and tree burial as obtaining.³⁰ Jones says, "Four men make his grave, or, rather, either burn him or hang him up in a coffin." And again, "A man was put on the stage [scaffold] if he was well liked; and they used to burn them to keep the maggots from eating the corpse."³¹ Dall writes only of the Kutcha-Kutchin, that they "formerly burned their dead."³²

Among the Babine Carriers, the nearest to the Tsimshian, cremation, Morice says, was "general."³³ For the Carriers in general he says it obtained among all classes of the population.³⁴ It seems, to judge from these remarks and from one of their myths, to have been universal, without which one might not enter the spirit world. The spirits guarding the entrance there reject a ghost from earth because "He does not smell of smoke."³⁵

In nearby Siberia we find examples of contrasting types of mortuary dispositions within the same culture. For example, among the Gilyak, with whom cremation obtained, the corpse of a small child is not cremated, but is buried immediately, because "its soul does not wander at once." And "anyone slain by a bear is not cremated; his soul goes in the forest and becomes a bear."³⁶

Such distinctions within a culture are quite universal however. They delude the archeologist into seeing mixtures of races and cultures where none exist. They make the tracing of the diffusion of mortuary traits difficult. Adequate note of differences and their reasons or rationalization are not always made by field workers. Differences within the culture exist both on the basis of caste and occupation, and on the difference in the manner of death. It is difficult, even when the rationalizations are known, to determine to what extent they have affected the cosmology

³⁰ Hardisty, op. cit., p. 319.

³¹ Jones, op. cit., p. 326.

³² W. H. Dall, *Tribes of the Extreme Northwest*, Smithsonian Contributions, 1877, p. 30.

³³ Morice, op. cit., 1905, p. 199.

³⁴ A. Morice, *The Western Dene*, Proceedings of the Canadian Institute, 1888-89, p. 143.

³⁵ A. Morice, *Carrier Tales*, *ibid.*, 1888, pp. 160-161.

of a people or how far they are the result of the cosmology. The whim of the person often affects the mode of burial.³⁷

THE SHAMAN MORTUARY OFFICIAL

The cultural development of northwest coast mortuary ceremony to which we now turn is another which is especially interesting when compared with perhaps similarly evolved traits in the culture of the southeast of North America. I refer to the existence of special mortuary officials probably of shaman origin among the Choctaw, Natchez, Chitimacha, and other tribes. Our object here, however, is to make a regional survey which will serve in the future its comparative uses.

1. Among the Tlingit, Haida, and Tsimshian the shaman proper and the sorcerer (or witch, as the case may be), were quite distinct functionaries.³⁸ There seems to have been no classification of types of the shamans proper.

In the area south of the Tsimshian, inhabited by the peoples who did not treat the corpse of the shaman differently from others, who did not cremate at all, and whose culture did not contain the sib, we have, besides the mere herbalist, the distinction of the sorcerer, who dealt in sympathetic magic, primarily, and apparently had no dependence on familiar spirits, and the shaman proper, who cures internal diseases with the help of a guardian spirit or familiar.³⁹ Among the Kwakiutl at least those sorcerers who served chiefs to counteract the evil of other hired sorcerers are distinguished as a class from those who use sympathetic magic in the treatment of illness.⁴⁰

³⁶ Czaplicka. *op. cit.*, p. 151.

³⁷ Among the cremating Chuckee, "the corpse is questioned as to its choice of manner of burial, and the disposing of its goods, and the questioners pretend to obey its will." *Ibid.*, p. 151.

³⁸ F. Boas, *First General Report*, 1889, pp. 854-855. Boas, *The Nassqa*, British Association for the Advancement of Science, 1895, p. 581.

³⁹ F. Boas, *First General Report*, 854-855; *ibid.*, *The Lkungen*, British Association for the advancement of Science, 1890, pp. 580-582; *The Nootka*, *ibid.*, p. 596; *The Lower Frazer River Tribes*, *ibid.*, 1894, p. 462.

⁴⁰ Curtis, *The North American Indian*, v. 10, 1910, p. 63 seq.

Among the Coast Salish the shaman proper, as distinct from the dealer in sympathetic magic or sorcerer, was of one of two classes. There were the healers, who were primarily doctors, curing internal illnesses, and the soothsayers,⁴¹ who specialized on the interpretations of omens.

Of the healer or doctor Hill-Tout notes for the Tcilqeuk, that he is invariably a male; his power is derived from a guardian spirit which is acquired after a period of seclusion; he can send his own soul after that of a sick man; and upon its return he can recount his adventures in the spirit world; his specialty is the treatment of disease of a spiritual nature—that is, internal illness resulting from the wandering of the soul. (*The Tcilqeuk*). For the Lkungen, Boas writes that only a youth who has never had sexual intercourse can acquire the guardian spirit which will enable him to become a shaman; the spirit is acquired during a period of seclusion in the woods; he is best able to effect cures of disease after nightfall. (*The Lkungen*; cf. *The First General Report*, pp. 854-855.)

Of the soothsayer, Hill-Tout writes for the Tcilqeuk that he is a male; his work is to heal wounds, also to interpret dreams, omens, portents. (*The Tcilqeuk*.) For the Siciatl he observes that "Only those whose psychical makeup fitted them for the office ever became seers." (*The Siciatl*.) Of the Kwantlem, we may judge from the descriptions of the mortuary rites that the office of soothsayer may have been hereditary, father to son; but we also read that the soothsayer chose apprentices as followers, to whom he gave initial instructions. (*The Kwantlem*.)

Of the sorcerers of the Kwakiutl, Curtis says that they obtain skill and power in sympathetic magic by practice in childhood under the instruction of a father or uncle who is a sorcerer. (Op. cit., p. 65.) Of the Tcilqeuk sorcerers Hill-Tout writes that they may be either men or women, and besides practicing sympathetic magic, *they are able to chase away ghosts*. (*The Tcilqeuk*.) Of the Lkungen Boas states that the sorcerers were generally women (witches); that they do not acquire guardian spirits; they cure diseases *not due to the absence of the soul from the body*; and they *appease hostile powers* by speaking to them in a sacred language. For large payments these witches will teach their art, individually to a novice. "Rich persons sometimes engage a shaman to look after their welfare." (*The Lkungen*.)

The data from the Tcilqeuk especially details the mortuary functions of the soothsayer or seer. "Other of his functions were to take care of the bodies of the dead and prepare them for burial, and to protect the people from the evil influence of . . . the

⁴¹ C. Hill-Tout, *The Tcilqeuk*, British Association for the Advancement of Science, 1902, pp. 361, 364-366; *The Pilatq*, *ibid.*, pp. 400, 404, *The Kwantlem*, *ibid.*, pp. 410, 413, 415; *The Siciatl*, *ibid.*, 1904, p. 26. Among the Tcilquek the doctor is called a *sqelam*; the soothsayer, an *olia*.

ghosts of the dead. Only an *Olia* soothsayer; might venture to handle or have any dealings with a corpse or its ghost. He was able to see and have communion with the latter, who, it was supposed, *nightly haunted the burial grounds*. The people were warned consequently to keep away from such places, especially after recent burials." As soon as the breath left the body, one or more soothsayers began to prepare the corpse. They were assisted by laymen; these laymen were first "cleansed" by the soothsayers. Relatives of the deceased also had to be "purified."⁴² Possibly the same data holds for the Kwantlem; at any rate we read that before the breakdown of native culture, in earlier days, "the man who handled and prepared the corpse for burial belonged to a special class or order, the office descending from father to son."⁴³ The soothsayers of the Tcilqueuk painted the corpse red. For the Pilatlq we read that "Those who tended the corpse were apparently a distinct order or class . . . They were called *Spoplakoetsa*, that is, 'corpse handlers'." They also painted the corpse red.⁴⁴

With the Pilatlq, after the 'corpse handlers' have prepared the corpse, it is not they, but the *sqelam* or doctor (the term for doctor being the same as among the Tcilqueuk) who "took charge of it and conveyed it to the tomb."⁴⁵

2. Only for the Salish of the lower Frazer River do we have note of the specialization of shamans having given rise to two definite categories, doctor, and soothsayer, each class having its distinct mortuary functions. It is doubtful if such regimentation obtained in the areas circling around the lower Frazer; it seems rather that, as among the Chinook, that the possession of guardian spirits was the good fortune of only some among the population; that some guardian spirits were stronger than others, and some conferred the ability better to perform certain functions than others. It would seem that the facts were not materially different

⁴² Hill-Tout, *The Tcilqueuk*.

⁴³ *Ibid.*, *The Kwantlem*.

⁴⁴ *Ibid.*, *The Pilatlq*.

⁴⁵ Hill-Tout, *The Pilatlq*.

than among the Thompsons of the interior, save that not many of the people acquired guardian spirits. However, the assignment of mortuary office to persons spiritually qualified was characteristic of the entire region surrounding the lower Frazer on the coast, south of the Tsimshian to the Columbia.

For the Chinook Curtis writes that upon death, two men whose "medicine" (guardian spirit) particularly fitted them for the care of the dead and *who were supposed to be capable of communicating with the departed soul*, were employed as undertakers; others of these same men—called *Iyahilalih*—might be called in to assist. They dress the corpse *before sunrise*, carry it away, and inter it. With their medicine songs, they communicate with and *control* the spirits of the deceased.⁴⁶ For the Quinault he writes that "those of either sex who were believed to have *inherited* supernatural power which enabled them to care for the dead were known as *halaqt*." These corpse handlers immediately upon death prepare the corpse. Then, *at night*, three or four *asuguanach*, "shamans with power to recall the souls of persons *not really dead*," watch by the corpse. Then a number of men called *cha't-halaqt* (*cha't*, "to handle") carry the body away. After the burial the *asuguanach* returns to the house of the deceased and shakes his rattle; finally the *halaqt* distribute the property of the deceased.⁴⁷

For the Cowichan Curtis states that "As a rule there were professional undertakers, men and women who had inherited this function." Such a person is called a *shuhqaiyuhl*. Such corpse handlers prepare the body during the night and finish before

⁴⁶ Curtis, op. cit., v. 8, pp. 96, 98.

⁴⁷ *Ibid.*, v. 9, p. 87. For the Quinault, it is stated that the body is kept "unusually long in order that the relatives may be able to come and witness it." This is apparently unique in this central area of the coast at least. But for the Tcilqueuk Hill-Tout writes (*The Tcilqueuk*, p. 364) that the corpse is left longer in the house than among the other lower Frazer tribes, because they find it difficult to chase the ghost of the deceased. With the Siciatl (Hill-Tout, *The Siciatl*, p. 33), the corpse is not prepared for burial until a day or so after death; with the other Halkomelem tribes, the corpse was immediately removed from the house after death. "This unusual delay was due to the fact that these old men [the corpse handlers] had to go apart by themselves and undergo some ceremonial preparation before they handled the body." Both the Siciatl and the Tcilqueuk vary from the other lower Frazer tribes, then, but for different reasons. (Cf. the Carrier and Lillooet data above.)

sunrise. Two other men, called *Tsimanuqe*, made the coffin. A woman, called *hukakuwil*, drove the ghost from the vicinity of the relatives of the deceased.⁴⁸

Among the Quinault, after the body has decayed, two *halqt*, not necessarily the same ones who had served as corpse handlers, gather the bones and inter them.⁴⁹ Among the Chinook, "A year or possibly less after the burial, a man was hired to gather the bones, wrap them up in a skin, and leave them in the burial house;" this man is "a certain man possessing the right to act in this capacity."⁵⁰

The specialization of shamans to serve as mortuary officials apparently did not obtain among the Kwakiutl as among their Salish neighbors. "As soon as the death wail is heard a number of *aaphila* ("caretakers") whose services have previously been engaged by the family, assemble. . . . These are unmarried persons (at least temporarily so) of the same sex as the deceased, and this number varies from two to eight, depending on the wealth of the family employing them. In the case of very poor families their work is performed as an act of charity." These *aaphila* prepare the body, and the body is hurried into its previously prepared coffin and interred. (Curtis, op. cit., v. 10, p. 54.) The hair of the mourning relatives must be cut for them by others not relatives; if the relatives presume to do the haircutting themselves, evil will come to them. (F. Boas, *Ethnology of the Kwakiutl*, Annual Report, Bureau of American Ethnology, 1914, pp. 709-710.) For the Nootka, Curtis writes that ten men are appointed by the chief to carry away the corpse to burial. (Curtis, op. cit., v. 11, p. 43.)

For the Lillooet, with whom the Tcilqeuk had intimate intercourse, we read that "old men" were "hired" to act as corpse handlers. (Boas, *The Lower Frazer River Tribes*, p. 459.) Morice states of the Carriers that "Immediately after death had occurred, the corpse was prepared for burial

⁴⁸ Curtis, op. cit., v. 9, p. 35 seq. Coffin making seemed to be a matter of serious concern northward on the coast also. For the Kwakiutl we read that "For one whose death is awaited the coffin is made in advance by a man who has lost a wife by death;" and at the same time a cedar-bark rope for binding it is prepared by a widow or ex-widow. (Curtis, op. cit., v. 10, p. 53). With the Haida, the coffin and grave house are made by "the combined labor of the men in the village," or, "if they do not wish to make it, they subscribe to purchase from some one of their number who has a suitable box." (Dawson, *Queen Charlotte Islands*, p. 133.)

⁴⁹ Curtis, op. cit., v. 9, p. 87.

⁵⁰ *Ibid.*, v. 8, p. 99. Sometimes the bones of several relatives might be gathered up together. With the Quinault, the *Shuhqaiyuhl* employed must be of the same sex as the deceased. Among the Haida, it is one or two relatives of the deceased who act as corpse handlers, and these must be of the same sex as the deceased. (Curtis, v. 11, p. 87.) Cf. the Kwakiutl data above.

by an old man, who had first to chew cedar leaves as a protection against the dangerous influence of a corpse." *It was quite necessary that the undertakers be aged.* (Morice, *The Western Dene*, Transactions of the Canadian Institute, 1892.) Of the Siciatl it was stated that the corpse is prepared by four or five old men who are *friends* of the relatives.

In the culture of the cremating peoples of the north there is likewise apparently an absence of the specialization of the shaman as an undertaker. We may note however the available data. We have noted the assignment of a person to disjoint the corpse among the Tlingit. For the Tlingit at Sitka, Lisiansky noted that the scalping of the dead enemies in war was done by the shaman who accompanied every war party. (Lisiansky, op. cit., p. 238; also stated by Niblack, op. cit., p. 341, who says it was "usually" the shaman's work.) For the Kutchin tribes Hardisty writes (op. cit., p. 317): "Those who bury the dead receive a quantity of beads in payment, but fear of the lifeless body makes them averse to the office and they generally endeavor to evade being selected to perform the service, owing to the restrictions imposed by their rules on all those who are selected to perform that duty." (He then describes the lustration following undertaking service.) But, as with the primitive interior Thompsons with whom relatives of the deceased handled the body and dug the grave, going through four day's lustration afterwards (Teit, *The Thompson Indians*, p. 331) the relatives of the deceased appear to be those who were the corpse handlers. For the Tlingit, Haida, and Tsimshian we have definite statements to the effect that *the undertaking work is done by relatives of the same sex as the deceased, and by relatives only who belong to the mother-sib of the deceased person's father.* Members of the dead person's own sib are not allowed to touch the body. Women of the father's clan are employed to act as wailers. Nearest relatives of the deceased mourn for a whole year. (Cf. Boas, *First General Report*, p. 829; Curtis, op. cit., v. 11, p. 126. Haida). As for dead shamans it is interesting to note that with the Haida, the people "were not afraid of a dead shaman as they were of other dead people" (Curtis, op. cit., v. 11, p. 127), and for the Tsimshian: "It was known among the people. . . . *that dead men were very dangerous to shamans.*" (Boas, *Tsimshian Mythology*, p. 327.)

3. To return to the Tcilqueuk, our starting point, we now note the doctor's rather than the soothsayer's special mortuary functions. The doctor or healer (*sqelam*) shared priestly functions with the tribal chief, in a way. The chief was high priest as well as chief, interceding for his people with the sky-god. But the *sqelam* was "*par excellence* the 'Master of the Mysteries,' and conducted all mortuary sacrifices. At certain times he called for sacrifices for the dead; these were always at sunrise." Then everyone who had a deceased relative or friend came with goods. A fire was made within a round platform, open in the centre;

the platform carried the property to be disposed, while the shaman stood in the open place in the centre by the fire. The shaman put the property in the fire, but left some for distribution. "It seems that they hold that things destroyed by fire lost the essence of their being, their 'spirit forms'."⁵¹ For the lower Frazer River Salish in general, Boas wrote that "at the burial food is burnt for the dead on the beach. On this occasion the *shaman* throws presents for the dead into the fire on behalf of the mourners. He then affirms that *he sees the deceased person's* spirit, who speaks to him."⁵²

For the Clallam, Curtis writes: "The Clallam possessed a peculiar mortuary custom. After a burial certain *swinaam* ('attendants of the dead') might be sent to the cemetery with food, which they were to burn there in order that its spirit might pass to the shadow world for the use of the human spirit. Only *swinaam* were entrusted with this duty, because they were accredited with power to discern spirits *both of the living and the dead* and hence could prevent theft of the food spirit by *thieving spirits of living human beings*. For their services these *shamans* retained a portion of the food."⁵³

Of the Kwakiutl we note that "Food [of all kinds] is burned for the dead on the beach, sometimes in great quantities, which is intended to serve for their food."⁵⁴ And for the Tseelís, that shortly after death, the relatives of the deceased hold a mortuary feast and burn food and some of the property of the deceased in order that he might not go empty handed into the other world.⁵⁵ Jewitt describes two occasions of such burning among the Mooachat Nootka, informing us that such burning of goods is held only for the head chief of the tribe and his relatives; and in one of the two cases described the king himself acts as sacrificer, while

⁵¹ Hill-Tout, *The Tcilqueuk*.

⁵² Boas, *First General Report*, p. 855.

⁵³ Curtis, *op. cit.*, v. 9, p. 88.

⁵⁴ Boas, *First General Report*, p. 855; and *Ethnological Notes on the Northwest Coast*, Proceedings of the Philosophical Society, Philadelphia, 1888, p. 427.

⁵⁵ Hill-Tout, *The Tseelís*, p. 321.

in the other case, his personal attendant, a civil official, sacrifices instead.⁵⁶

Comparative Note. These data from the region just north and south of Puget Sound are particularly significant in comparison with the data on special mortuary functionaries in the southeast of North America. For the cremating Chukchee of Siberia we read that directly after death, one man by day and two by night, watch, *in case the dead should come to life*. (This recalls particularly our Quinault data.) During this time a man or woman called the "fortifier" performs ceremonies to fortify the house and the people against the influence of the deceased. Other persons called "the followers" wash and dress the body, ceremoniously. On return from the funeral the fortifier protects the people magically.⁵⁷ Unfortunately we are told nothing of the qualifications needed for these positions, and there is nothing further known to the writer of special mortuary functionaries in Siberia. In Japan, before the intrusion of Buddhism from China, there existed a special mortuary class, which, with the coming of Buddhism, became a despised caste given up to butchering animals and working in leather; this caste, the *Emibe*, today numbers several millions in Japan.⁵⁸ Among the Parsees the official corpse bearers, called *Nasasalas*, who form a distinct class" carry the corpse to its place of exposure to the wild birds.⁵⁹ In Egypt of the Greek period, the *paraschites*, who were the functionaries who incised the corpse preparatory to evisceration, were a despised and abhorred group, forced to live apart from the community, and

⁵⁶ Jewitt, *Narrative*, p. 105 (1803).

For the Carriers, Cox writes that the property of the deceased is burnt at his pyre "if he happened to be a person of consequence."

⁵⁷ Czaplicka, *op. cit.*, p. 146 seq.

⁵⁸ *Japanese Year Book*, 1920. The Japanese acquired ancestor worship from China. The Japanese anciently looked on death "with horror and disgust," and today they avoid graveyards "as uncanny, or even haunted." Formerly, at Yamada Ise, where the great shrine stands, "funeral services had to be performed after dark, even stealthily."

⁵⁹ M. Williams in the *London Times*, Jan. 28, 1876, cited by Yarrow, *Further Mortuary Customs of the American Aborigines*, p. 105.

roundly berated and chased with threats after the performance of their necessary mortuary work!⁶⁰

Concluding Note. The ability of the shaman to see and control the souls of the living and the dead appears to have caused the assignment to shamans of the disagreeable and dangerous duty which ordinary persons are less well equipped to perform—the preparation and burial of the corpse. To the shaman for the same reason was given the collection of the bones of the dead and the dispatching of food and clothing to the deceased. This development seems to have arisen among the tribes of the lower Frazer River and to have been diffused southward along the coast to the Columbia River. It apparently did not enter the cultures of the Nootka and Kwakiutl or of the cremating mother-sib tribes of the northern coast.⁶¹ It appears to have been developed in the coast culture, and not derived from or spreading to the culture of the plateau. The specialization of functions peculiar to shamans was reflected in the specialization of duties for shamans in mortuary practices, and this resulted in the differentiation of several shamanistic mortuary castes. *In this mortuary development the shaman becomes a priest, so far as his behavior goes, but his qualification for office and the basis or origin of his functions are shamanistic.*

The animistic basis of the development we have surveyed seems to be universal. It is the same animistic basis out of which arose the soul-loss theory of disease with the accompanying additions to the work of the shaman as a doctor. *Despite the universality of the animistic basis of the soul-loss theory of disease and its cure*, the theory developed only in the North Pacific area, being diffused largely through Siberia and northwestern North America. The development of the shaman as undertaker and sacrificer out of this same basis is definitely evidenced here for a portion of the northwest coast of North America. The portion of the coast

⁶⁰ Wilkinson, *Manners and Customs of the Egyptians*, 1865.

⁶¹ However, compare the functions of the shaman at the funeral pyre among the Carriers, in connection with reincarnation, described by Morice in his articles on the Western Dene in the 1888-89 Proceedings of the Canadian Institute, and the 1892 Transactions of the same.

culture most intimately in contact with Siberia did not develop or absorb this new trait. It seems to be absent in Siberia. Historical connection clearly accounts for the presence of the soul-loss theory of disease in both Siberia and northwestern North America.⁶² We have shown that special mortuary classes have obtained in other cultures, Egypt, Persia, Japan, Siberia, and Southeastern North America. Only in one of these, southeastern North America, do the facts indicate that the special mortuary class were in fact or in origin shamans; but the same may (or may not) have been the case in the other cultures we have spoken of. The problem remains as to the possibility of convergent development, with the answer to be found in psychology rather than historical connection, or, contrariwise, of historical connection. The writer must perforce leave the subject, satisfied for the present, pending the presentation of other regional studies. Other phases of the study presented in this paper, however, would seem perhaps to at least suggest historical connection with the southeast.

MUMMIFICATION

In the last of the phases of Northwest Coast mortuary practices to be here considered the writer believes we have something very clearly accounted for, not by independent development, or by historical connection with the mummification of southeastern North America, but by diffusion from Asiatic coasts of the North Pacific.

Mummification in the historic period obtained among the Aleuts and the Kadiak or south Alaskan Eskimo, covering the south Alaskan coast from and including the Aleutian Islands to Kadiak Island and the shores of Chugach or Prince William Sound occupied by the Eskimo.

Archeological evidence shows that anciently the Aleuts usually laid their dead on a rude platform of wood or stones under some overhanging rock—in a rock shelter. "This," Dall says, "was apparently the more ancient form of disposing of the dead, and one which until recently was still pursued in the case of poor or

⁶² See Lowie, R. H., *Primitive Religion*, 1924, pp. 178-179.

unpopular individuals." More ancient, he apparently means, than the alternative old practice, also persisting historically, of walling up the corpse in a chamber of the underground house. As with the Eskimo and along the whole coast, the corpse was bound in a sitting position, anciently as well as recently. Dall believes that the evidence indicates rather clearly that mummification appeared only lately, say, from about 1740, or not long before the advent of the Europeans (Russians). It was never used in the treatment of any corpses save of those of the rich and noble (presumably of those who could afford it.)

The body was eviscerated "evidently through the pelvis, as the cutaneous tissue of the mummies is not cut but the pubic region shows signs of having been opened." The fat of the body was washed out in running water. The body was then dried in some way⁶³ and wrapped in sitting position in matting, which was waterproofed. The mummy package was then hung in a rock shelter so that it would not touch the ground.

Sometimes, however, the prepared body was placed in a lifelike posture, dressed, and armed. The body was placed as if engaged in some congenial occupation, such as hunting, fishing, and if a woman, sewing, etc. With them were placed the implements of the occupation, effigies of the animals they were pursuing, while a hunter would be dressed in his wooden armor, and provided with an enormous mask. All these carved objects were made of wood, even the weapons being only imitation weapons. The effigies included wooden effigies of men, possibly attendants.⁶⁴

The Aleuts mummified and so treated both males and females of all the wealthy families. *Among the Kadiak Eskimo, however, only those males who did the whaling of the tribe were mummified* and the mummies of the Kadiak were provided with actual stone weapons and tools, but *were not rigged out with all the other para-*

⁶³ In the Aleut region "animal matter readily dries without putrefaction." (W. H. Dall, *Cave Relics of the Aleutian Islands*, Smithsonian Contributions, 1878, p. 31.)

⁶⁴ W. H. Dall, *Shell Heaps of the Aleutian Islands*, pp. 84, 89, Smithsonian Contributions, 1878, and *ibid.*, *Cave Relics*, pp. 5, 12, 19, 26.

phernalia of masks, effigies, etc., characteristic of Aleut mummies. First fruits were served up to the mummies by the living.⁶⁵

Lisiansky says that all Kadiak workmen thought that the successful prosecution of their work required the use of magic derived through charms and purification ceremonies. This is perhaps a universal trait of early culture. Compare for example *The Functional Families of the Patwin*, (University of California Publications in American Archaeology and Ethnology), where occupational or functional groups existed on the basis of inherited magic ownership but where, nevertheless, anyone might undertake any occupation without the advantageous magic.) With the Kadiak, whaling was presumably open to anyone, but it was thought the secrets with the magically treated implements were necessary to successful whaling. The magic was inherited, and therefore, the profession of whaling was virtually an inherited one; but the magic was given to that possible heir who had proven himself, during his father's life, in his training physically and technically a capable whaler. Lisiansky writes (op. cit., pp. 174, 207-209) that, "The whale fishing, however [in distinction from other employments] belongs almost exclusively to particular families, and is handed down to those children who prove most expert in it. But this art is not brought to such perfection as in Greenland and many other places." A Kadiak whaler, in a single bidarka, attacks only small whales," using an harpoon with slate head. "When wounded, . . . the whale runs to sea and dies, and is perhaps never seen again," unless washed ashore by wind and current. The whaler's harpoon heads are marked so that each knows his own. The Kadiak considered the whale their choicest and best food, and the whalers "have great respect paid to them and are considered the purveyors of their countrymen." But during the whaling season the whalers are considered unclean "and nobody would eat out of the same dish with them or even come near them." At the commencement of spring, the whale fishermen go up into the mountains in the interior of the island" to search for eagle feathers, bear's hair, and different stones and roots." And "Of these whalers a story prevails that when the fishing season is over they conceal their instruments in the mountains until wanted again. And that they steal, whenever they can, the bodies of such fishermen as die and were known to have distinguished themselves in their calling, whom they preserve in caves. These bodies are said by some to be stolen from the idea that the possession of them conduces to render the fishing season prosperous, and, by others, that a juice or fat is extracted from them, into which an arrow is dipped, the whale, when wounded, dying the sooner from it." "The abominable custom prevailing among the whalers of stealing the dead bodies from the graves and secreting them in caverns. . . is carried so far that a father at his death bequeaths this cavern to the son whom he appoints to succeed him in the whale fishing, and the son endeavors to

⁶⁵ Dall, *Cave Relics*, p. 26; *ibid.*, *Shell Heaps*, p. 90. Cf. the data on other collections in Yarrow, op. cit., p. 134 seq.

augment the precious collection *so that a whaler may be found possessing upwards of twenty such corpses.*"

Mummification therefore had been diffused very nearly to the borders of the northward moving, cremating, Tlingit culture. It might well have in time been diffused the length of the coast. The body-dessicating air of the Aleut country was no better for drying a corpse than that of the Kwakiutl region where corpses placed in tree burial dried into mummies.⁶⁶ We have already described the crude attempts at temporary preservation of the corpse of chiefs and dear ones among the Tsimshian.⁶⁷ The Haida would probably have appreciated mummification; at any rate, with them, "sometimes the body of a high chief was laid away in a small lean-to into which the rear wall of the house opened, so that the inmates could look in upon the coffin."⁶⁸

The practice of mummification, similar in so many significant details, rather general with one people, and restricted to a certain caste with the other, both peoples being territorially contiguous and the only ones in their territory making use of the practice, must have had a common origin in the case of the Aleuts and southern Eskimo. Since it has been such a late development, if for no other reason, it would be absurd to look to eastern North America for the origin of the practice, and it is difficult to admit its independent development especially because of the nearness of the Ainu who practiced mummification. The distance between the Ainu and the Aleuts was considerable, but if diffusion took place, as we have seen, it was probably early in the eighteenth century. It is not inconceivable that mummification remains to be disclosed as having been practiced among neighbors of the Ainu, perhaps some Japanese, and that with them the elaborate system of effigies, etc., was associated with mummification, and by them, carried northward. We note, at any rate that with the Ainu as with the Aleut, the skin is not cut, but the entrails are taken out without cutting—with the Ainu through the anus,

⁶⁶ Curtis, *op. cit.*, v. 10.

⁶⁷ See above, p. 132.

⁶⁸ Curtis, v. 11, p. 127.

with the Aleuts through the "pubic region," probably. The Ainu dried the body in the open air, as the Aleuts probably did.⁶⁹

The lateness of the development of the practice of mummification probably prevented its further diffusion before the coming of the Europeans. Its special use for whalers among the Aleuts, furthermore, is not connected, probably, with any immigration of mummifying nobles or craftsmen but was adopted especially for whalers as a result of the before-existing and more widely diffused use of corpses by whalers in the magic of their craft. The use of corpses by whalers is found also among the Clayoquot, Nootka and apparently also among the Makah Nootka of Cape Flattery, the Clayoquot occasionally using one of the accidental mummies resulting from tree burial. As was probably the case with the Aleuts, the wealth acquired in whaling among the Nootka led to chiefship, and the whaling craft is usually the prerogative of the head chief and nobles.⁷⁰

It seems to the writer that the urine-washing practices of the Kwakiutl are probably the result of a diffusion from the northward, as are probably the corpse-using practices of the Nootka whalers (See Curtis, v. 10, pp. 46-47). Unfortunately details on whaling and whale taboos are inadequate for the cultures between the Clayoquot and the Kadiak. For the Tlingit, Niblack writes that while seal and porpoise "flesh, or blubber, is esteemed a great delicacy, . . . they will not eat whale's blubber for superstitious reasons." (p. 276.) Apparently the Tlingit did no whaling. The Yakutat or most northerly tribe of Tlingit were different. Dall (*Tribes of the Extreme Northwest*, pp. 21, 36-37) wrote that the Yakutat were said not to use the labret (at that day) and that "they are said not to adopt the totemic system, so much in vogue among the other Tlingits, and eat the blubber and flesh of the

⁶⁹ On the Ainu see the journal (French) *T'oung Pao*, v. 3, p. 209, references being made to the *Zeitschrift für Ethnologie*, v. 13. Supplement, 1881, p. 34. The Ainu described are those of Krafsto Island, Saghalin. (The same note refers to the mummification practiced on Darnely Island, described in *Globus*, v. 61, p. 248.) With the Ainu the entrails were taken out through the anus by a friend of the deceased who has promised during the life of his friend to perform this function. The body is dried in the sun for thirty days and finally buried.

⁷⁰ See especially Curtis, op. cit., v. 9, and v. 10, pp. 46, 287-288, also J. G. Swan, *The Northwest Coast*, and J. G. Swan, *The Makah*, Smithsonian Contributions, 1869, pp. 52-53, 55, 59; and J. R. Jewitt, *Narrative*, 1815, pp. 30, 69-71, 83, 108. The Makah used to frequently bury their dead six feet below the surface of the earth in order to minimise the danger of desecration by whalers.

whale which the other tribes of their stock regard as unclean." The Yakutat language was a very aberrant Tlingit language. Probably the Yakutat were an Eskimo group one step farther along the road in those earlier days to complete assimilation of Tlingit culture than their neighbors the Ugalakmiut Eskimo (Ugalenzenes), who were an hybrid tribe whose language was being replaced by Tlingit and who called themselves the Chilkatmiut. The shell-mounds bear some witness to the probability that the Eskimo once occupied the coast as far south at least as the Chilkat River. (See Dall in Smithsonian Contributions to Knowledge, 1877, p. 130; and Petroff, I: *The Populations of Alaska*, 10th Census of the U. S., 1880, v. 8, p. 146). While Dawson, (Queen Charlotte Island, p. 111), could find no evidence of the Haida ever pursuing the whale, a stranded whale was considered a great prize. I know of no reference to whaling or whale eating by the Tsimshian. Curtis could find no evidence of whaling among the Kwakiutl save that on the beach of the village of the Hayales, an extinct tribe of Quatsino Sound; there were many whalebones, and the Kwakiutl had a tradition that in that tribe there was a famous whaler who made use of corpses. (Curtis, v. 10, pp. 29, 287.)

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THEOPHIL MITCHELL PRUDDEN

BY THE RECENT death of Dr. Theophil Mitchell Prudden the Anthropological Association has lost one of its Founders, and Southwestern archaeology one of its foremost students. Although archaeology was an avocation with Dr. Prudden, he brought to it the resources of a mind naturally adapted to and specially trained for scientific endeavor. For many years it was his custom to relax the strain of his important professional duties with the Rockefeller Institute by trips to Colorado, Arizona and Utah. Summer after summer he travelled by packtrain across the arid plateaus of the San Juan country, and it is doubtful if any other man ever so thoroughly explored that difficult region.

Dr. Prudden's journeys were more than mere vacations, for he always brought back maps of the intricate canyon systems, notes on the climate, and descriptions and photographs of the hundreds of ruined pueblos and cliff houses that he encountered. Dr. Prudden, also, was far more than an observer and an amasser of data. His interest lay in the fundamental problems of culture-growth, and he at once saw in the Southwest a fertile field for morphological studies. He was the first to describe in print the early Basket Maker culture in an article in Harper's magazine for June, 1897. This was followed in 1903 by "The Prehistoric Ruins of the San Juan Watershed" in the "Anthropologist," a model report of reconnaissance, accompanied by a most invaluable map, but especially important in that it embodied the author's identification of the old "unit-type" of pueblo structure, and thus laid the foundation for all subsequent research on the developmental side of Southwestern civilization. The problems raised by the discovery of the "unit-type" led Dr. Prudden to excavate a number of these early villages and to publish "The Circular Kivas of Small Ruins in the San Juan Watershed," and "A Further Study of Small House Ruins" in the "Anthropologist" of 1914, and the "Memoirs" of 1918.

Dr. Prudden's love for the San Juan was by no means confined to its scientific aspects; his "On the Great American Plateau" is the most vivid and delightfully sympathetic account of Southwestern life and desert travel that has yet appeared. His kindly nature endeared him to all those with whom he came in contact; to be known as a friend of Dr. Prudden's was the best credential one could offer at any trading-post on the Navajo reservation.

Of late years ill-health kept Dr. Prudden from his beloved San Juan, but his interest in the region, its people, and its ruins never flagged. He was a generous contributor to the funds of expeditions, he read with keen interest everything published on Southwestern archaeology, and his advice and friendly criticism were of the greatest help to the younger men entering the field.

A. V. KIDDER.

BOOK REVIEWS

METHODS AND PRINCIPLES

Race Prejudice. JEAN FINOT. Translated by Florence Wade-Evans. New York: E. P. Dutton and Co., 1924. lx and 309 pps. \$3.00

This book contains 24 chapters grouped into five "parts" or sections. It is written with considerable earnestness and fire, and attempts by the marshalling of scientific data to swing public opinion around to a certain definite and rather new point of view. Parts of it are interesting.

The volume is one of those which proclaims from the house tops a doctrine of equality among the races, and a program of brotherhood. Finot's main wish is to deal only with facts. "Theory" he affects to despise. He wishes to feel that he is scientifically minded, perfectly detached from prejudice and preconception, willing to go to any extremity if the facts will bear him out. He is willing to be regarded as bold, is ready, in brief, to carry the banner at the head of the millennial procession. His is a "reforming" book, and its author has a bone to pick with nearly every investigator who preceded him.

As a matter of fact, there are many passages in the book which indicate that the author has hypnotized himself; and he certainly did so when he succeeded in believing that he had achieved any impartial attitude. The book is a straight piece of *ex parte* writing, not more than passably well done even as pure rhetoric.

Occasional vagueness in the style of the book I suspect to be due in part to the work of the translator, but aside from that I do not find more than two chapters which are clear, with evidence of proper organization. The best section is the author's account, very lively and picturesque, of an effort to "get at" the traits of the French nation. It develops that the French are credited with the most inconsistent virtues, and convicted of the most inconsistent failings, by various people who are supposed to know. This chapter would have been instructive to most of us twenty-five years ago. Even yet, it is picturesque and amusing.

The author's methods, however, call for some looking-over. When he grows over-heated (mere heat is his normal state), he is capable of putting three major discrepancies into one sentence. His whole book shows moreover a peculiar attitude; very hard for a Yankee like the reviewer to wholly understand. If consistency is the virtue of little minds, Finot's may perhaps be a great one. He certainly regards consistency as a non-essential. In other words the book is a sermon, not a scientific treatise; and a sermon characterized by invective rather than strict logic.

For example, he believes that "race" prejudice with all its fruits is intellectually foolish and morally wrong, but in the very first page of his "Foreword," he commits himself to the idea that civilization is "Anglo-French humanity," nothing more. He is certainly inconsistent here with his proclamation of liberty, equality and fraternity among all races, tribes, stocks, and peoples. If only the English and French are civilized, some disability certainly attaches to the rest of us. Post-war propaganda of this sort makes one suspect the author of looking to his sales, rather than praying and working, as he claims, for the dawn of the millenium. The book does not seem altogether honest throughout. Either it is a little disingenuous, or the author more than a little naïve.

Our friend in framing his volume appeals most piously and virtuously to anthropological data; but meanwhile quite spitefully wishes all anthropologists at the devil. Why this is, I do not know. Many of them share his views in part, particularly American anthropologists. He cites statements from the literature principally when he wishes to ridicule. When he wishes to "prove" something he often cites no authorities at all. In this way, he makes the most astounding remarks, describes things unheard of, without citing any data. I may give an illustration of what I mean.

In connection with the race problem in the United States, he says that the Red tribes are doomed, for the time being, to "irremediable extinction" (a first class logical difficulty here, if I am any judge) but he adds that ". . . the negro and the Yankee under climatic influence both approximate to the type of the Red Skins." (*Race Prejudice*, page 99). I have heard a good many sensational statements in my life, but for paralyzing effrontery, this bears away the palm. I wonder how this phrase ran in the French edition. Perhaps in the original tongue it was not quite such paralyzing drivel as in the English version.

Such a slap-dash manner of dealing with matters on this side of the sea is quite equalled by the author's essays in other directions; for example, by his treatment of similar topics in the European field. He says on the page just cited that "a number" of bones, considered to be negroid, have been found in "different parts of Europe." This is citing data with a vengeance. The reader thinks at once of the Grimaldi finds, but what other bones and what other parts of Europe are referred to is indeed a mystery.

Such wild-eyed announcements, in which our author proclaims things hitherto unheard of, are matched by the most naïve discovery of things not at all in need of being discovered. For example, the author advertises the idea that "the parts of our skeletal framework may change, under the influence of climatic factors, but they never in any case cross the line which separates mankind from the other animal species." All this we do all of us truly and earnestly believe; but why speak of it? A man would be an outright lunatic to believe otherwise. Consider the sensation that would flood an anatomist's bosom if he saw in a *human* skeleton, some bone that was *not* human. As far as such passages are concerned, a man looking for scientific information might as well read Jules Verne.

The best thing I can find to say, in conclusion, of Finot's work, is that it is a direct opposite to Grant's *Passing of the Great Race*. If the latter book is poison, Finot's is an appropriate antidote.

T. T. WATERMAN.

PHYSICAL ANTHROPOLOGY

The Evolution of Man. Essays by G. ELLIOT SMITH, M.A., M.D., Litt. D., D.Sc., F.R.C.P., F.R.S. Oxford University Press, American Branch, New York, 1924. Pages viii and 160. 19 figures. Price, \$2.85.

This all too brief book contains three more or less independent essays or lectures on the Evolution of Man and in addition a preface which might also be dignified by calling it an essay. The Foreword is one of the most interesting parts of the book, although it is ostensibly to function only as an attempt to link up three essays written in 1912, 1916, and 1924. The subject of the Foreword is Man's Pedigree. The other three essays are The Evolution of Man, Primitive Man, and The Human Brain. Although these essays overlap considerably and all have to do with an historical inquiry

into the circumstances of man's origin and descent, any one of them could be profitably expanded into a book.

Figures 1 and 2 are charts, the first a tentative scheme of the relationships of the different genera, species, and races of the Human Family, and the second a tentative scheme of the relationships of the Order Primates. It would be poor sportsmanship to shoot at these targets, for such diagrams are always full of inconsistencies. Some ideas must be sacrificed or misrepresented in order to properly present others which appear more important to the author.

The Primate tree does not differ in many details from those published by Gregory in this country, but the Human tree contains several new ideas. Skin color and the development of the supraorbital region are the basis of arrangement. The Alpine race is made to branch off before the other European types. The justification of making the Nordic, Mediterranean, and Alpine races of equal rank with the Negro, Mongol, and Australoid groups might reasonably be questioned.

For those of us who have had no chance to examine the Rhodesian man there is much of interest in Professor Smith's disposition of this find. This type is regarded as a separate species of man more primitive even than *Homo neanderthalensis* and one which branched off the human stem very close to the point where *Homo heidelbergensis* diverged. This attribution is largely on the type of brain indicated by the cranial cast and will undoubtedly be challenged by many.

Hesperopithecus is assigned to a position just below *Pithecanthropus*.

Figure 4 is a map of the wandering of the Primates.

The first essay is almost wholly biological. It deals with the evolution of man as a mammal and as a Primate. Chief interest centers on the brain and more especially that portion of the cortical area designated by Professor Smith in 1901 as the neopallium. In the closing paragraph, the author expresses his opinion on "the fundamental similarity of the working of the human mind" and its impotency.

The second essay deals more exclusively with man. He discusses the evolution of man physically and culturally. Since this essay has been reviewed in considerable detail by N. C. Nelson, it will be unnecessary to repeat the details of it here. Much of it is out of the field of the reviewer.

The third essay on the Human Brain is all too short. Anthropologists will welcome warmly anything this eminent anatomist and anthropologist may contribute to our knowledge of the human brain and its development. It is to be hoped that Professor Smith will find time to collect his many important contributions to this subject into book form where they will be more accessible to anthropologists and psychologists.

In brief this is a very valuable and stimulating collection of essays. Anthropologists, psychologists, and all others interested in the evolution of man will read this book with profit. Best of all, although the subjects are rather special ones, the essays are written in readily understandable English and are very easy reading.

LOUIS R. SULLIVAN.

Richtlinien für Körpermessungen und deren statistische verarbeitung mit besonderer Berücksichtigung von Schulermessungen. Von DOCTOR RUDOLF MARTIN, o. ö. Professor der Anthropologie und Vorstand des Anthropologischen Instituts der Universität München. J. F. Lehmanns Verlag, München, 1924. Pamphlet form of 64 pages with 30 figures and 4 plates. Price 30 cents.

The title of this handbook is almost in itself a review. This guide supplements in a measure the well-known *Lehrbuch der Anthropologie* but it deals exclusively with the anthropological examination of school children. The observations and measurements recommended differ from those recommended in the *Lehrbuch* only in being fewer in number. Many anthropologists who have experienced the difficulties of taking detailed measurements on children will undoubtedly feel that the number could be still further reduced without serious consequences.

Although the purpose is apparently to reduce the number of instruments one is tempted to question the wisdom of recommending the beam calipers (body calipers) for such measures as head height, face height, nose height, and ear-height of head, and the spreading calipers for breadth of nose. It can be done no doubt, but such procedure would be awkward at best and probably rather disconcerting for the subject. After much experimenting on the height of the head (ear height) I am convinced that only by some such apparatus as T. Wingate Todd's special measuring device can ear height of the head be measured with a reasonable degree of accuracy.

The booklet contains many time saving suggestions for the calculations of ages, grouping of the material by months, quarters, and half years. Forms for repeat or follow-up investigations are also suggested.

Several pages are devoted to statistical method and to the presentation of results in tables and charts.

All in all this is a very convenient summary of the form studies of growth should take. It is to be hoped it will reach all workers in this field. Its use, however, should be supplemented by the study of the *Lehrbuch* also.

LOUIS R. SULLIVAN.

Rassenkunde des deutschen Volkes. By DOCTOR HANS F. K. GUNTHER.

Fourth revised edition, with 14 maps and 537 text figures. 512 pages. J. F. Lehmanns Verlag. München, 1923. Unbound, \$2.10; bound, \$2.60.

This book is a popular summary of the race types of Germany: their physical and mental characteristics. The author begins with a discussion of the concept of race and defines the four European racial types found in Germany. He has finally departed from Ripley far enough to recognize a fourth or Dinaric type in addition to the traditional Nordic, Mediterranean, and Alpine types.

Some little space is devoted to an explanation of anthropometric technique, but it is apparently for purposes of initiation only.

Four long sections deal with the physical characters of the four types. These are the most detailed and most profusely illustrated descriptions of the European types in a general book that have yet come to my notice. Cranial types as well as living are shown. There is an interesting, but all too short, section on Mongolism and Mongols in Germany and central Europe. Also a brief discussion of the amount of Negro blood that has found its way into Germany in historic times.

In four more sections the psychological characteristics of the four races are dealt with. Here the author has compiled a large number of opinions and descriptions of the mental characteristics of the races. It is impossible of course for such characterizations to be free from prejudice, but they are interesting and thought-provoking nevertheless.

Some interesting estimates of the racial composition of Germany are given. Some 60 percent of German blood is said to be Nordic in origin, although only 6 to 8 percent of the Germans are pure

Nordics. This is a rather complicated mathematical problem, but such figures would seem to me to indicate that practically everyone in Germany had a greater or lesser amount of Nordic blood. The Alpines are said to form only 20 percent of German blood, but this low estimate is accounted for by attributing 15 percent to Dinaric blood. Only two percent of German blood is Mediterranean. This seems incredible. Mongol blood forms 3 percent and in the east is as high as 6 to 8 percent.

According to Günther only 6 to 8 percent of the Germans are pure Nordics, 3 percent are pure Alpine, and 2 to 3 percent are pure Dinaric. This means that approximately 85 percent of the German people are of mixed racial origin. Estimates for Nordic blood are always based on pigmentation although there is growing evidence that all reductions of pigment are not Nordic in origin.

From Germany the author proceeds to the rest of Europe and gives a brief discussion of the races of Europe for the most important European countries. Another section deals with race mixture and hybrids.

After a short discussion of the very early types of man in Europe the author enters the more speculative field of the early history of the Nordics and attempts to allocate racially some of the famous historic figures, such as Aristotle, Caesar, etc.

The concluding chapters deal with the racial prospects of Germany and the author concludes that Germany's hope for the future lies in the Nordic race which forms the backbone of the nation.

There is appended a long section dealing with the Jews and the Jewish problem.

There is much of interest and value in the book. Some of the maps are especially interesting. The photographs will be valuable to those who teach anthropology.

LOUIS R. SULLIVAN

AMERICA

The Ammassalik Eskimo, Contributions to the Ethnology of the East Greenland Natives. In two parts. Second part: No. 1, HJALMAR THUREN, *On the Eskimo Music*; No. 2, WILLIAM THALBITZER AND HJALMAR THUREN, *Melodies from East Greenland: Meddelelser om Grønland*, vol. XL, Copenhagen, 1923.

In these two papers Messrs. Thalbitzer and Thuren have presented a large number of songs comprising not only those collected

by Mr. Thalbitzer from the natives of various sections of Greenland, either from direct dictation or from transcribed phonograph records, but also those collected and published by R. Stein in an article entitled *Eskimo Music*, which appeared in *The White World*, New York, for 1902, which the present authors have transposed and reproduced for the purpose of comparison with their own material.

In the first section of the paper Mr. Thuren discusses the literature hitherto published on Eskimo music, and presents an analytical study of the songs of a number of tribes, including those from East Greenland which he and Mr. Thalbitzer collaborated in transcribing from the phonograph records. His analyses and the results he derives from them have the unusual merit (for musical studies) of being exceedingly clear and concise. They would have been a little more complete had he shown by tables or discussed more fully the rhythmic development of the songs, since he speaks with enthusiasm concerning the consistent rendering of rhythmic patterns which he considers far more complicated than the average European can adapt himself to. He employs no measure bars, using three degrees of accent signs, a plan which has its merits, but the absence of measure bars hampers the quick grasp of such metric and rhythmic peculiarities as may exist and he has not shown them in any other way. It is not clear whether he has tested the rhythmic accuracy through a number of renditions of the same song by the same singer and by different singers, although he states that the pattern prevails through different strophes in the course of the song. Mr. Thalbitzer says that the same song sung by different singers always varies, while in the few examples where the same general rhythmic or melodic idea occurs more than once in any song it appears to me that accuracy in repeating the pattern appears only sporadically and the majority of strophes change slightly. In the repetition of the same word phrases there is usually apt to be a general rhythmic structure which could as easily be followed by a chorus as by an individual. The melodic rhythmic structure in much primitive music is liable to be controlled by the speech rhythms although Mr. Thuren says that this is not always the case in these Eskimo songs. Mr. Thuren says:

Text strophes and refrain strophes follow one another in definite order, and the subdivision of the refrain constantly returns in the same form, or at any rate with quite inconsiderable change. The text strophes in a song

use the same melodic basis, and however different the text may be, the singer always seeks to fit it into the framework of the melody once chosen, so that the length of the single melodic period and the principal rhythm are preserved as far as possible throughout the song.

But fitting any text to the same melodic framework and maintaining the same time value for a given phrase of melody are two different things, and an attempt to follow the principal rhythms as far as possible still leaves great latitude for variation. The adherence to the same melodic framework with different texts, and, as a natural sequence, a rough similarity in rhythms belonging to the melodic pattern as first introduced, are common to the music of many American Indian tribes; but, unless the total time values for any melodic phrase are maintained almost exactly even when accompanied by different texts, this need not argue for high or artistic rhythmic development. With the exception of one or two songs, there is nothing in the present collection to indicate that, regardless of text, proportionate time values for the melody tones are maintained in more than casual fashion. It is unfortunate that Mr. Stein's melodies were written in abbreviated style, with merely letter indications with prime marks to represent the repetitions of the same melodic phrase with variations. Mr. Thuren was necessarily hampered by this condition.

The music is also studied not only from the standpoint of scales but from that of melodic composition or phrase structure, a side which most writers on exotic music are inclined to dismiss lightly or overlook altogether. From the scale analyses it is found that intervals larger than a half step are preferred, namely whole, $5/4$ or $3/4$ steps. Melodically the Eskimo have not developed, Mr. Thuren thinks, to the degree that they have rhythmically. There is one prominent tone which the author calls the *tonus currens*, and usually one below it, ranging from a third to a fourth downward, usually a fourth. There are two or three tones above the *tonus currens*, close to it, particularly in the East Greenland melodies. Such a tonal table is comparable to that encountered in the chant music of some of the Polynesians and other peoples whose music is but little advanced. The Eskimo melodies reveal a very constant relation between the total range of each song and the number of pitches composing its melodic structure, showing that with the exception of the skip of the fourth from the *tonus currens* down to the lowest tone the intervals used are about one degree in magnitude. The most common scales

in East Greenland music have, in order of pitch, the first, fourth and fifth or the first, third and fifth.

Smith Sound melodies appear to be less definitely formed than those of East Greenland and employ a larger number of scales, with a marked tendency to connect dissimilar melodic motifs. Some songs have only one motif, repeated indefinitely with slight variations. While the interval of the perfect fourth is the melodic basis of most of the tunes, they differ from those of East Greenland in grouping other tones close about the lowest rather than the highest limit of the prevailing interval. The East Greenlanders employed in addition to their real songs a kind of a recitative, lying between real melody and speech. The Smith Sound Eskimo have recitatives, but weave more melody into them, and the impression has been gained that in that locality the music has felt some foreign influence.

In North Greenland the pentatonic scale prevails and the music has been more influenced still by European melodies, yet there is a resemblance to the Smith Sound songs. The joining of dissimilar melodic themes extends to choosing quite different levels. The Southwest Greenlanders have been even more influenced by European music and their scales tend to be diatonic.

Mr. Thuren concludes that the songs of the Smith Sound Eskimo, Northwest Greenlanders, and Central Eskimo, (based on Dr. Boas' work), are related, while those of the East Greenlanders are much less developed melodically.

Mr. Thalbitzer's article, *Melodies from East Greenland*, gives in full the material which he collected and on which Mr. Thuren based his study of the music of that region. The collection is prefaced by introductory remarks on the source of the melodies and on the singers, on the value of the phonograph as compared to recording in notation from direct dictation, and the desirability of combined efforts of two transcribers in deciding upon the written form. He mentions particularly the extent of emotional expression achieved by the Eskimo in their songs, as comparable to that in European music, and the art revealed in rendering children's songs, necessitating the finest modulations of the voice.

It appears that the same melody does not travel among very many tribes, so that it is impossible to conclude whether such melodies as have been collected have remained unchanged for generations. Mr. Thalbitzer feels that the relatively high development apparent in the music of the East Greenlanders argues a growth of hundreds of years uninfluenced by any but Eskimo ideas.

HELEN H. ROBERTS

AUSTRALIA

Origin of Australian Beliefs. LAMBERT EHRLICH. Anthropos-Administration, St. Gabriel Mödling, Vienna, 1922, 78 pp, 2 maps.

Professor Ehrlich is chiefly concerned with the beliefs in a Supreme Being that have been reported from some Australian tribes. The first half of his book is concerned to show that the various "evolutionary" theories of religion (Tylor, Frazer, Marett, Durkheim, etc.) fail to give a satisfactory explanation of the beliefs and customs of the Australians. The criticisms are necessarily very condensed, and are consequently in some instances not very effective. The criticism of Durkheim's theory, for instance, deals almost entirely with quite minor points that do not really affect the main thesis, and the only criticism directly aimed at this is to the effect that it "would necessarily destroy all actual religion in those who would accept it as the true explanation of religion." (p. 43.) "Durkheim's theory, in its effort to explain religion, destroys all religion, which is its proper subject. Can this be true science?" This criticism would hardly seem to be justified, and would in any case be equally applicable to any attempt to explain religion by natural causes, social or psychological. The test of a scientific theory is not what its effects will be but if it is true.

In the second half of his book Professor Ehrlich deals with the "culture-history" of Australia. He accepts the views of Graebner with some criticisms and modifications. He concludes (in agreement with Father Schmidt) that "the fact that we meet Supreme Beings in the southeast of Australia and that the more we approach the area of the most archaic culture the more divine and free from mythological admixture do they appear, justifies our assumption that they are an element of the most primitive culture of Australia; but that they have undergone the influence of cultures of later immigrations which degraded them by identifying them with their own ancestors, cultural heroes, and applying to them their lunar and solar mythology." In his discussion of the meaning of the Australian mythology, particularly of the Southeast he adopts the view of Matthew that the myths are really the disguised record of tribal history. He criticises Schmidt's view that these myths are really lunar and solar myths, but thinks that astral elements have modified the original hero-legends. "It is natural that Nuralie, Bunjil, and their sons should be depicted as stars or as the sun. For, primitive man, contemplating

celestial phenomena, would find in them a naïve analogy to the tradition of his tribe and would thus transfer the heroes of his people as constellations to the heavens in order to have them always before his eyes." (p. 75). (This is not an unfair example of the type of argument that is to be found in Professor Ehrlich's work.)

There are two maps showing the distribution of different types of social organization and of totemism in Australia. These maps contain some errors. For example the tribes in the southwest corner are erroneously marked as having a four class system, whereas they have only the dual division. In Eastern Australia only the Euahlayi are shown as having individual totems whereas many tribes of this region have them. The whole of Southeast Australia is marked as a region of animal totems while the centre and west is marked as a region of animal and plant totems. But the real condition is more complicated than this. In Southeast Australia we have a system of totems and sub-totems and while the principal totems are nearly but not quite always animals there are many plants among the subordinate totems. In the west there are multiple totems (animal and vegetable) with no such distinction of principal and subordinate totems.

It may very well be questioned whether discussions such as are contained in this book and similar works are really of very much value to science in the present state of our knowledge of Australia. Thus our knowledge of the belief in a Supreme Being is based on very imperfect observations, and in such matters incomplete information is generally false information. It is worse still when an author relies, as does Professor Ehrlich, on arguments from distribution in a region of which the greater part has not been ethnologically explored. Thus he lays great stress on the local distribution of the belief in a Supreme Being in the southeast. But beliefs which seem to be of exactly the same kind are to be found in the extreme west, and may quite possibly be discovered in many other regions when they are sought with care. For one characteristic of these beliefs in both east and west of the continent is that they are kept secret amongst the initiated men, and would not in the ordinary way ever come to the notice of a white man even though he might have lived amongst the natives for many years.

The same thing is true of the mythology. The available information consists of mere fragments of which it is almost useless to discuss the meaning. What is needed is intensive field-work on a

large scale to obtain, before it is too late, the information that will enable us to discuss the problem of Australian culture with some hope of reaching verifiable conclusions.

A. R. RADCLIFFE-BROWN

OCEANIA

Tongan Place Names. EDWARD WINSLOW GIFFORD. Bernice P. Bishop Museum. Bulletin 6 (Bayard Dominick Expedition Publication No. 7), 1923.

This valuable contribution to Polynesian ethnogeography, produced by the Bishop Museum, Honolulu, is further fruit of the Bayard Dominick Expeditions. Four thousand seven hundred and seventy-six names of localities in Tonga are recorded. The author's study of these names has led him to important and interesting conclusions respecting the movements of the people within the Tongan Group, and he has also presented certain deductions from the comparison of a limited number of Samoan with Tongan place names. Interesting and important as these results are, the full usefulness of this record will appear only when the publication of similar lists from other Polynesian and extra-Polynesian regions makes possible an extensive ethnogeographic survey of the whole area concerned. The verdicts of such a survey, amenable as they are to strict statistical method, may well approximate to certainty. In this, as in so many matters anthropological, the work should be put in hand without delay. A perusal of Mr. Gifford's Tongan Gazetteer reveals the presence of names introduced from European sources, with of course the concomitant probability that native names will soon disappear from foreign named localities. This, however, is no new phenomenon; Samoan and Fijian names have been brought to Tonga.

Mr. Gifford introduces the Gazetteer with eight geographical poems, of which both Tongan text and English translation have been published. As the author was less than a year in the Tongan Group he was compelled to rely on others for his translations. The names scattered throughout these poems are in some instances written in the English version in their original Tongan forms, and in others translated into English. Although some of these English renderings of Tongan names possess poetic beauty, and although only a proportion of them are susceptible to such treatment, yet it would have been

better perhaps to have adopted a thoroughly free treatment of the poems, including the names, or else to have adhered to the Tongan names and relegated suggestions as to their meanings to notes or to the *Gazetteer*. In these, as in other Tongan poems, there is so much that is unfamiliar, even to those possessing a good working knowledge of the language, that it is impossible to regard the English as in all cases a literal translation of the Tongan.

Mr. Gifford's analysis of the names found in the five parts of the group, viz., Tongatabu, Haapai, Vavau, Niuafoou, and Niuatoputapu shows that Haapai, Vavau, and Niuafoou have closer relations with Tongatabu than with each other. This result, contradicting the anticipations aroused by geographical propinquity, confirms the tradition of long political supremacy of Tongatabu, and the author advances reasons also for assigning to the latter island a longer occupancy than that of the other parts of the group. The one exception to this greater intimacy of contact with Tongatabu is that of Niuatoputapu, which shares the highest percentage of its names with Vavau, though even here Tongatabu is a very close second. The *Gazetteer* itself is much more than a mere list of names. The author has recorded (1) the feature to which the name is applied; (2) the group of islands in which the feature occurs; (3) the island on which the place is located; (4) the village near which it is located; (5) the name of the landlord; (6) miscellaneous data, which include many interesting pieces of folklore and tradition. It should be noted that the rapid accumulation of so large a list, with much attendant information, was made possible by the records of the Land Office being placed at the disposal of Mr. Gifford. Should similar work be undertaken in other regions similar records would doubtless be available and facilitate its accomplishment. Mr. Gifford sounds a necessary warning against too great reliance on the meanings suggested, but the attempt to analyze name forms has, against other virtues, philological value. Whilst some of the names, largely descriptive, have clear enough meanings, there are many to whose meaning the clue can be furnished, if at all, only by comparative methods.

The volume contains very clear outline maps of Tongatabu and Vavau, and the admirable presentation of the closeness of relation of the various parts of the group, as revealed by analysis of the place names, is accompanied by a little sketch which illustrates the position at a glance. This paper is an excellent production; the introductory notes and analysis are succinct and lucid; the arrangement and

printing of the Gazetteer present the material with the utmost clearness. It is to be hoped that similar compilations for other regions will make possible the extensive survey to which this investigation of Tongan names is a prelude. One might suggest, also, that personal names would repay attention of the same kind.

E. F. V. COLLOCOTT

SOME NEW PUBLICATIONS

A. L. Kroeber and William Duncan Strong. *The Uhle Collections from Chincha* (University of California Publications in American Archaeology and Ethnology, v. 21, no. 1, 1924, pp. 1-54, pl. 1-24). \$1.60.

Barnum Brown and Wm. K. Gregory. *On Three Incomplete Anthropoid Jaws from the Siwaliks, India.* (American Museum Novitates, no. 130, Sept. 22, 1924, pp. 3-9).

Beckwith, Martha Warren. *The Hussay Festival in Jamaica* (Publication of the Folklore Foundation, no. 4., 1924, pp. 1-17).

Breasted, James Henry. *Historical Tradition and Oriental Research.* (Proceedings of the National Academy of Sciences, v. 10, no. 7, July 1924, pp. 289-294.)

Budge, E. A. Wallis. *The Book of the Dead.* New York: E. P. Dutton, 1924.

Capitan et J. Bouyssonie. *Un Atelier d'Art Préhistorique, Limuil (Dordogne).* Paris: Librairie E. Nourry. 20 fr.

Casanowicz, I. M. *The Collections of Old World Archaeology in the U. S. National Museum.* (Smithsonian Report for 1922 [1924] pp. 415-498, 57 pl.)

Christian, F. W. *Vocabulary of the Mangaian Language.* (Bernice P. Bishop Museum, Bulletin 2, 1924, 31 pp.)

Clay, Albert. *A Hebrew Deluge Story.* Yale University Press, 1924. \$1.75.

Clay, Albert. *The Origin of Biblical Traditions: Hebrew Legends in Babylonia and Assyria.* Yale University Press, 1924. \$3.00.

de Mendizábal, Miguel O. *Ensayos sobre las Civilizaciones Aborígenes Americanas.* vol 1, *Las Religiones.* Mexico City: El Museo Nacional, 1924. pp. 1-346.

Emerson, Joseph S. *Hawaiian String Games.* Edited by Martha Warren Beckwith. (Publications of the Folklore Foundation, no. 5, 1924, pp. 1-18.)

Emory, Kenneth P. *Island of Lanai: A Survey of Native Culture.* (Bernice P. Bishop Museum, Bulletin 12, 1924, 129 pp. 11 pl., 20 figs., 2 maps.)

Enthoven, R. E. *The Folklore of Bombay.* New York: Oxford University Press, American Branch 1924, 8 vo., pp. 9-353. \$4.70.

Ferreira, J. Bethencourt. *Questão de Antropologia na sua relação com a Medicina Legal.* (Arquivo de Medicina Legal, v. 2, no. 1. 2 e 3. Janeiro, Abril e Julho, 1923, pp. 105-114.) Lisbon

Fewkes, Walter J. Preliminary Archaeological Explorations at Weeden Island, Florida (Smithsonian Miscellaneous Collections, v. 76, no. 13, 1924, pp. 1-26, 21 pl.).

Fewkes, Walter J. The Use of Idols in Hopi Worship (Smithsonian Report for 1922 [1924] pp. 377-397, 6 pl.).

Gill, Lorin Tarr. The Coral Tombstones of the Marrianas (Art and Archaeology, v. 18, no. 4, October 1924, pp. 154-166).

Gilmore, Melvin R. Old Assiboin Buffalo-drive in North Dakota (Indian Notes, Museum of the American Indian, Heye Foundation, v. 1, no. 4, October 1924, pp. 204-211).

Heye, George G. Darien Ethnology (Indian Notes, Museum of the American Indian, Heye Foundation, v. 1, no. 4, October 1924, pp. 194-200).

Huntington, Ellsworth. The Character of Races. New York: R. V. Coleman, 1924, large 8 vo., 400 pp., maps and diagrams. \$5.00.

Judd, Neil M. The Chaco Canyon Pit Houses (Smithsonian Report for 1922 [1924] pp. 399-413, 7 pl.).

Kidder, Alfred V. An Introduction to the Study of Southwestern Archaeology with a Preliminary Account of the Excavations at Pecos. Washington, D.C.: Art and Archaeology Press, 1924, 4 vo., maps, 50 pl., \$4.00.

Laum, Bernhard. Heileges Geld: Eine Historische Untersuchung über den sakralen Ursprung des Geldes. Tübingen: J. C. B. Mohr (Paul Siebeck), 1924, pp. viii + 164. GM 5.40 Foreign price, GM 7.—

Lekkerkerker, C. Les Récentes Découvertes Archéologiques dan l'Ile de Bali (Revue Anthropologique, no. 78, Juillet-Auot, 1924, pp. 237-253).

Leon, Nicolás. Las Castas del Mexico Colonial o Nueva España (Museo Nacional de Arqueologia, Historia y Etnografia, Publicaciones del Departamento de Anthropologia Anatómico, no. 1, 1924, pp. 3-76). \$1.50.

Loud, Llewelyn. The Stege Mounds at Richmond, California (University of California Publications in American Archaeology and Ethnology, v. 17, no. 6, 1924, pp. 355-372, 2 pl.) \$.35.

Lovén, Sven. Ueberdie Wurzeln der Tainischen Kultur. Teil 1, Materielle Kultur. Göteborg: Erlanders Boktryckeri Aktiebolag, 1924. pp. iv + 454, taf. 11. 15 Kr.

MacCurdy, George Grant. Human Origins: A Manual of Prehistory. New York: D. Appleton and Company, 1924. 2 vol., 410 illus \$10.00

MacLeod, William Christie. The Origin of the State: Reconsidered in the Light of the Data of Aboriginal North America. Philadelphia: Westbrook Publishing Company, 1924.

Moss, C. R. Naboloi Tales (University of California Publications in American Archaeology and Ethnology, v. 17, no. 5, pp. 227-353). \$1.75.

M. D. Mironov and S. M. Shirokogoroff. Sramana-Shaman: Etymology of the Word Shaman (Journal of the Royal Asiatic Society, North China Branch, v. 55, 1924, pp. 105-130).

Obermaier, Hugo. Fossil Man in Spain. Hispanic Society of America. Large 8 vo., 4 full-color pl., 23 pl., figs. and maps. \$5.00.

Pach, Walter. Los Mayores Artistas de America (Boletin del Museo

Nacional de Arqueologia, Historia y Etnografia, Tomo 2, no. 4, 1923, pp. 65-77).

Pearl, Raymond. The Racial Origin of the Almshouse Paupers in the United States (Science, v. 60, no. 1557, October 1924, pp. 394-397).

Pearson, Karl. The Life, Letters and Labors of Francis Galton, Vol. 2 Cambridge: At the University Press, 1924, 4to, pp. xi-424.

Pepper, George Hubbard. A Strange Type of Pottery from Utah (Indian Notes, Museum of the American Indian, Heye Foundation, v. 1, no. 4, October 1924, pp. 167-184).

Prince William of Sweden. Among Pygmies and Gorillas: With the Swedish Zoological Expedition to Central Africa, 1921. New York: E. P. Dutton, 1924.

Reade, William Winwood. The Veil of Isis. New York: Orientalia, 1924. 8 vo. \$1.75.

Reagan, Albert B. Recent Changes in the Plateau Region (Science, v. 60, no. 1552, September 1924, pp. 283-285).

Riasanowsky, W. A. Common Law of the Mongols. Part L (The Herald of Asia, no. 51, 1924).

Satomi, Kishio. Japanese Civilization. New York: Orientalia, 1924. \$4.50.

Schmidt (Smits) P. P. The Language of the Negidals. The Language of the Olchas (Publications of the Latvian University, v. 4 and 5, 1923.)

S. M. Shirokogoroff and V. B. Appleton. Growth of Chinese. (Chinese Medical Journal, May, 1924, pp. 1-14).

Shirokogoroff, S. M. Who are the Northern Chinese? (Journal of the Royal Asiatic Society, North China Branch, v. 55, 1924, pp. 1-13).

Skinner, Alanson. The Mascoutens or Prairie Potawatomi Indians. Part 1, Social Life and Customs. (Bulletin of the Public Museum of the City of Milwaukee, v. 6, no. 1, 1924, pp. 1-262, 8 pl.).

Smith, Grafton Eliot. Elephants and Ethnologists. New York: E. P. Dutton and Company, 1924. 135 pp., woodcuts. \$6.00.

Spinden, Herbert J. The Reduction of Maya Dates (Peabody Museum Papers, v. 6, no. 1, 1924, pp. 1-287, 4 pl.).

Stoddard, Lothrop. Racial Realities in Europe. New York: Charles Scribner, 1924. Maps. \$3.00.

Swinburne, J. Population and the Social Problem. New York: MacMillan and Company, 1924. 8 vo. \$6.00.

Uhle, Max. Explorations at Chincha. Edited by A. L. Kroeber. (University of California Publications in American Archaeology and Ethnology, v. 21, no. 2, 1924, pp. 57-94). \$1 60.

Von Niedermayer, Oskar. Afghanistan; With a Contribution by Ernst Diez: Die Buddhistischen und Islamischen Baudenkma ler Afganistans. Liepsig: Karl Hierseman, 1924 4to, 70 text figs.. 246 copper plates illus. \$19.00.

Wallis, Wilson D. Mental Pattern in Relation to Culture (Journal of Abnormal Psychology, v. 19, no. 2, July-September, 1924).

Waterman, T. T. The Shake Religion of Puget Sound (Smithsonian Report for 1922 [1924], pp. 499-507).

Weber, Max. Gesammelte Aufsätze sur Sozial- und Wirtschaftsgeschichte. Tübingen: J. C. B. Mohr (Paul Siebeck), 1924. GM 12.50; Froeign, GM 15-

Williams, Caroline Ransom. Gold and Silver Jewelry and Related Objects [Egyptian]. New York: The New York Historical Society, 1924. 4 to., xii-281 pp. \$10.00.

Willoughby, Charles C. Indian Burial Places at Winthrop, Massachusetts; with notes on the Skeletal Remains by Earnest H. Hooton (Papers of the Peabody Museum, v. 11, no. 1, 1924, 36 pp.).

William, Robert W. Astronomical Notes on the Maya Codices (Papers of the Peabody Museum, v. 6, no. 3, 1924, 46 pp.).

Wintemberg, W. J. Examples of Graphic Art on Archaeological Artifacts from Ontario (Transactions of the Royal Society of Canada, third series, 1924, v. 18, pp. 33-50).

DISCUSSION AND CORRESPONDENCE.

A RECTIFICATION

"Smithsonian Miscellaneous Collections, Volume 76, Number 13. Preliminary Archaeological Explorations at Weeden Island, Florida," by Dr. J. Walter Fewkes, is a very interesting account of recent work near St. Petersburg, on Tampa Bay, Florida.

Under the heading "Human Heads Made of Burnt Clay" is a statement (footnote 2, p. 15) that might indicate carelessness on my part, were this statement not an error.

The footnote is as follows: "Clarence B. Moore (Notes on Ten Thousand Islands) figures (p. 463) a human head effigy from Chokoloskee Key. In the Index he refers to 'human head-effigies on rim of vessel' collected at Moundville, but makes no reference to it in text."

There is no such reference in the index to "Notes on the Ten Thousand Islands" and the head-effigy from Chokoloskee Key is described in the text as not of pottery but of stone.

Moundville is a famous site in West Virginia.

Moundville, Alabama, is described in my "Moundville Revisited" which forms part of Volume XIII of the Journal of the Academy of Natural Sciences of Philadelphia, in which also is included my "Notes on the Ten Thousand Islands."

"Human head-effigies on rim of vessel" in the index of "Moundville Revisited" cites, page 346 on which we find "Vessel No. 5 from the ground south of Mound D, is a small bowl with a notched band around the rim and three equidistant, rudely modeled effigies of human heads, projecting upward."

CLARENCE B. MOORE

THE TWENTY-FIRST INTERNATIONAL AMERICANIST CONGRESS, SECOND SESSION¹ (GOTHENBURG)

The Second Session of the Twenty-first International Americanist Congress almost immediately followed the First, the participants of the latter being for the most part taken in a special train from The Hague to Gothenburg (Göteborg). The Second Session, which enjoyed the patronage of the King of Sweden, was held at the Högskola of Gothenburg, an institution of university grade, and lasted from August twentieth until August twenty-sixth, 1924. The original date for closing the proceedings had to be advanced by one day owing to the number of papers presented, and even so on most of the days it was necessary to divide the members into sections. None of the guests will readily forget the hospitality lavished upon them by their Swedish hosts, from the time of Governor Oscar von Sydow's reception on the opening night until the official banquet at the City Hall given by the City of Gothenburg on the last evening. This dinner, as well as the last day's proceedings, were attended by the Crown Prince and Princess, both of whom for some time past have taken an interest in archaeological research. A noticeable phenomenon was the attention devoted to the Congress by the daily press, which fully reported every session, giving long abstracts of the more significant communications. The most important matter of business settled related to the site of the next Congress. Owing to the representations of the European participants, who pleaded the difficult financial situation of European scholars, it was decided to accept the invitation of the Italian Minister of Education to hold the next Americanist Congress in Italy. A corresponding invitation from the City of Philadelphia was accordingly declined with thanks.

As is usual at such gatherings, the informal meetings of co-workers in small groups were among the most enjoyable events of the week's happenings. Thus Father Schmidt, Professor Boas, and others had an opportunity of discussing schemes of phonetic transcription; while Doctors Lehmann, Morley, and Spinden were able to argue the principles of Maya chronology. Those interested in Old World and New World connections had the pleasure of hearing Messrs.

¹ The account of the first session will be published when submitted.

Bogoras and Sternberg express their views from the angle of Siberian research.

On Sunday, August 24, the members were taken by boat to Kyvik, where Dr. Sarauw demonstrated a prehistoric archaeological site, which was forthwith attacked by M. Capitan. After a collation due to the hospitality of Herr Bernström, the party returned to the City, where they were treated to two superb sets of motion pictures, the first consisting of Dr. Bolinder's cinematographs from Colombia, the second of a remarkable series illustrating Lapp ethnography.

The extraordinary success of the Session was largely due to the untiring efforts of the General Secretary, Baron Erland Norden-skiöld, and the Göteborg Museum under his charge not only formed a natural rallying place of participants when not attending the meetings but created a profound impression owing to the model arrangement and labeling of its extensive South American collections.

Of the papers presented, the reports of quite recent investigations aroused special interest, viz. Fathers Koppers' and Gusinde's descriptions of work in Tierra del Fuego; and Doctors Birket-Smith and Matthiassen's preliminary reports on the ethnological and archaeological results of the Fifth Thule Expedition.

The following papers were presented:

Wednesday, August 20.

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| Rivet. | Les éléments constitutifs des civilisations du Nord-ouest de l'Amerique du Sud. |
| Morley. | The Excavations at Chichen Itza by the Carnegie Institution of Washington in 1924. |
| Koppers. | Die geheime Jugendweihe der Yagan. |
| Gusinde. | Die geheimen Jugendweihen der Ona und Alakaluf. |

Thursday, August 21.

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| Eaton. | Food Animals of the Peruvian Highlands. |
| Krause. | Beiträge zur Ethnographie des Araguaya-Xingú-Gebietes. |
| Karsten. | Animism of the South American Indians. |
| Posnansky. | Neue Forschungen in den Wüsten von "Carangas." |
| Roquette-Pinto. | On the Nanduty of Paraguay. |
| Koppers. | Mythologie und Weltanschauung der Yagan. |
| Heger. | Klangplatten aus Nephrit aus Venezuela. |
| Capitan. | Les têtes humaines coupées et figurées sur les vases de Nazca. |
| Mason. | Archaeological investigations in the region of Santa Marta, Colombia. |
| Danzel. | Die altmexikanische Magie im Lichte der neuen religionsvergleichenden und völkerpsychologischen Forschung. |

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| Termer. | Die Staatswesen der Mayavölker. |
| Callegari. | Mon excursion archéologique au Mexique. |
| Röck. | Der altmexikanische Prunkfederschild des Naturhistorischen Museums in Wien. |
- Friday, August 22.
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| Kaj Birket-Smith. | Preliminary Report on the Ethnological Results of the Fifth Thule Expedition. |
| Mathiassen. | Preliminary Report on the Archaeological Results of the Fifth Thule Expedition. |
| Bogoras. | Early migrations of the Eskimo from Asia to America. |
| Thalbitzer. | Cultic Festivals and Games in Greenland. |
| König. | Gedanken zur Frage nach der Urheimat der Eskimo. |
| Rivet. | Interprétation ethnographique de deux objets archéologiques. |
| Aichel. | Osterinselpaläolithen in prähistorischen Gräbern Chiles. |
| Röck. | Ein mythisch-religiöses Motiv der alten Mayakunst. |
| Saville. | The Woodcarver's Art in Ancient Mexico. |
| Gann. | Maya Jades. |
| Capitan. | Les huacos, amulettes et fétiches des tombes péruviennes. |
| Larsen. | The Discovery of the North American Mainland Twenty Years before Columbus. |
| Oberhummer. | Amerika auf einem Globus von 1522 und auf einer Weltkarte von Sancho Gutierrez von 1551. |
- Saturday, August 23.
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| Morley. | Recent Discoveries in Maya Chronology. |
| Lehmann. | Die räumliche und zeitliche Gliederung der Völker Mittelamerikas. |
| Uhle. | Der mittelamerikanische Ursprung der Moundbuilder und Pueblo Civilisation. |
| Joyce. | The hieroglyphic stairway from Naranjo. |
| Martínez. | Correlación entre la Cronología Maya y la Cristiana. Fechas de las inscripciones Mayas. |
| Wiener. | The Philological History of "Tobacco" in America. |
| Stahl. | Das Tabakrauchen in Südamerika. |
| van Panhuys. | Observations on the name <i>bacore</i> . |
| W. Schmidt. | Die Bedeutung der Genitivstellung für den Sprachaufbau in den Sprachen von Süd- u. Mittelamerika. |
| Rivet. | La parenté de l'Uru et de l'Arawak. |
| Preuss. | Das Verbum in der Sprache der Kágaba. Kolumbien |
| Rivet. | La langue Arda; une amusante méprise. |
- Monday, August 25.
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| Sapper. | Brujeria in Guatemala. |
| Cooper. | Culture Areas and Culture Diffusion in South America. |

Lebzelter.	Über Ona-Schädel im Feuerland; zur Frage des Vorkommens eines australoiden Elements in Südamerika.
Gusinde.	Mythologie und Weltanschauung der Ona und Alakaluf.
van Panhuys.	Recherche des tableaux sur le Brésil offerts par le Prince Jean Maurice de Nassau au Roi Louis XIV.
Krämer.	Ein Stück südamerikanische Ornamentik.
Aichel.	Ueber Feuerbohrtechnik in Chile und ihre Verwendung durch die Landbevölkerung in heutiger Zeit.
Hendriksen.	Notes on the plotting of difficult accessible ruins, with special reference to Inca ruins and some of their characteristic details and refinements.
Max Schmidt.	Für die Erforschung der altperuanischen Kultur bedeutungsvolle Sammlungsgegenstände des Berliner Museums für Völkerkunde.
Andres.	Parallelen im Opferritus der altgriechischen Buphonia-Opfer und im Kultus des mexikanischen Gottes Xipe Totec.
Heger.	Ein altperuanisches Gewebe mit merkwürdiger Bemalung.
Gates.	A page of the Dresden Codex.
Preuss.	Die Mexicano im Staate Durango und ihre Überlieferungen in meinen Textaufnahmen.
Sternberg.	The Idea of Divine Election in Shamanism as illustrated by material from the North Pacific tribes in Asia and North America.
Oberhummer.	Die Geographie von Mexico in den Briefen von Cortez.
Jane.	Las Casas, and the early history of America.
Hauthal.	Zwei bemerkenswerthe Funde im südlichen Patagonien.
Olascoaga.	Les races aborigènes de la République Argentine.
Debenedetti.	Expediciones arqueologicas oficiales y privadas en el Noroeste Argentino.
Hirtzel.	Collection d'Antiquités guatemaltèques du musée d'Archéologie de l'Université de Gand.
Salas.	Origenes Americanos.
Tuesday, August 26.	
Spinden.	Chorotegan Culture.
Boas.	Relations between America and the Old World.
Lowie.	On the Historical Connections between Certain Old World and New World Beliefs.

ROBERT H. LOWIE.

ANTHROPOLOGY AT THE WASHINGTON MEETING AND
PROCEEDINGS OF THE AMERICAN
ANTHROPOLOGICAL ASSOCIATION

The American Anthropological Association held its twenty-third annual meeting at the United States National Museum, Washington, D. C., on January 1, 2, and 3, 1925, in conjunction with Section H, American Association for the Advancement of Science, and the American Folk-Lore Society.

One meeting of the Council was held, with President Hough in the chair.

COUNCIL MEETING, JAN. 2, 2 P. M.

The following reports were read and accepted:

REPORT OF THE SECRETARY

The proceedings of the last annual meeting of the Association were published in the *American Anthropologist* for January-March, 1924. There has been no special meeting of the Association nor of the Council during the year.

The anthropological membership of the Division of Anthropology and Psychology in the National Research Council is now as follows:

To serve until July 1, 1926: M. H. Saville, F. G. Speck, J. R. Swanton.

To serve until July 1, 1927: A. Hrdlicka, A. V. Kidder, R. J. Terry.

The Association has lost by death during the year eight members: Mr. Latham Child; Rev. George W. Cooke; Mrs. Mary V. Jones; Mr. M. C. Long, a founder; Mr. W. E. Myers; Dr. T. Mitchell Prudden, a founder; Dr. William A. Stone; and Dr. Dean C. Worcester.

Seven members have resigned, eight have died, four have been dropped, and thirty-seven new members have been added, making a net gain of twenty-six. The membership at present is as follows:

Honorary members	5
Life members	12
Regular members	607
	<hr/>
	624

Respectfully submitted,
 ALFRED V. KIDDER,
Secretary.

REPORT OF THE TREASURER

Receipts

Balance on hand December 17, 1923		\$1275.42
American Ethnological Society	\$ 448.00	
Anthropological Society of Washington	175.00	
Annual membership dues:		
1922	\$ 13.00	
1923	98.00	
1924	2418.32	
1925	197.60	
1926	7.00	2733.92
Sale of publications	850.73	
Reimbursements	647.56	
Interest	18.01	4873.22
	<hr/>	<hr/>
		\$6148.64

Disbursements

George Banta Publishing Co.:		
Printing etc.	\$2269.57	
Postage	24.44	
Storage Dec. 1923-July 1924	80.00	\$2374.01
Maurice Joyce Engraving Co.		54.95
Editor's Expenses		426.33
Secretary's and Treasurer's Expenses		97.18
Miscellaneous expenses	20.63	\$2973.10
	<hr/>	<hr/>
Cash on hand		3175.54
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		\$6148.64

Resources

Cash on hand Dec. 18, 1924		\$3175.54
Due from sales:		
1923	8.50	
1924	64.21	\$ 72.71
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PERMANENT FUND

Receipts

Balance, Dec. 20, 1923		\$1560.37
Interest, April, 1924.....	\$ 8 48	
Interest, October, 1924.....	8.51	
	<hr/>	16.99
Profit on sale War Savings Stamps.....		4.19
		<hr/>
		\$1581.56

Investments

Liberty Bonds.....	\$ 388.12	
War Savings Stamps.....	21.06	
Treasury Savings Certificates	60.00	\$ 469.18
Cash awaiting investment.....		12.38
Loan to general fund.....		1100.00
		<hr/>
		\$1581.56

The accounts of the Treasurer, A. V. Kidder, have been examined and found correct.

A. M. TOZZER,

E. A. HOOTON,

Auditing Committee.

The statement presented above shows the Association to be in sound financial condition. This state of affairs has been brought about by extreme economy on the part of the former Editors, Drs. Goddard and Swanton, and the present Editor Dr. Lowie; by a large increase in sales of back numbers of the journal; and by the generosity of several of our members, who have personally financed the publication of *Memoirs*, and paid for the illustrations of articles in the *Anthropologist*. We accordingly enter the year 1925 with a net excess of resources over liabilities of \$2,591.10.

According to our constitution (Art. ix, sec. 5) any surplus of the general or working fund beyond current needs shall be added to the permanent fund. The phrase "Beyond current needs" permits, of course, various interpretations, and opens up questions which must be settled by the Council or by its Committee on Policy, but which may perhaps properly be raised by the Treasurer as the individual responsible for the handling of the present surplus.

First, the indebtedness of \$1100.00 of the general fund to the permanent fund. This loan was made many years ago, and has borne no interest. We are now, for the first time, able to repay it without

dangerously reducing our working balance. The Treasurer recommends, therefore, that the above amount be transferred to the permanent fund.

Second, the handling of the remaining balance of \$1491.10 (or of \$2591.10 if the previous recommendation be not confirmed). Should this also be added to the permanent fund; should it be carried as an emergency balance without inclusion in the budget; or should it, wholly or in part, be included in the budget for the enlargement of the *Anthropologist*? Pending the solution of these questions by the Council, the Treasurer has prepared a tentative budget based on the normal annual income of the Association, a budget which permits no increase in the size of the *Anthropologist*.

Third, the disposal of the back stock. During the period when the *Anthropologist* was printed in Lancaster, Pa., the excess copies of each issue were stored free of charge by the New Era Co. When in 1921 a change was made to the George Banta Publishing Co. of Menasha, Wisconsin, the then Treasurer arranged to have the back stock transferred to their keeping. It was, however, not realized how large an amount of this material had accumulated, and when the shipment arrived at Menasha it was found too bulky to be housed by the Banta Co., and it accordingly became necessary to rent storage space at \$10.00 per month. Up to the present year \$280.00 has been paid for storage, and the Treasurer is most anxious to make some arrangement whereby this drain on the Association's finances may be stopped.

The Banta Co. have agreed to keep for us twenty-five copies of each issue or a total to date of 2,600 copies. This should be a sufficient quantity to fill such orders for back stock as we are likely to receive during the next two or three years. The stock on hand, however, amounts to some 13,000 copies. Did it consist of complete sets, there would be no question of the desirability of preserving the entire amount, but it is very unevenly distributed. Of some issues there are as many as 650 copies, others are practically exhausted. Hence our ability to provide complete sets is very limited, and it is by the sale of such sets that we are most easily able to dispose of back stock. By reprinting about ten issues we could fill out some fifty sets, but the expense of reprinting would probably amount to not less than \$5,000.00. Unless, therefore, it could be arranged to guarantee this amount by advance subscriptions for sets, it would appear inadvisable to reprint until the demand is more insistent than it is at present.

The excess of certain issues, however, is far beyond any conceivable need, and the Treasurer therefore recommends that the supply of each issue of which we possess more than 100 copies be reduced to 100; that all issues of less than 100 copies be retained complete; that the Banta Company's offer to store 25 copies of each issue be accepted; and that the balance of the stock be shipped to whatever institution may be prevailed upon to provide free dead storage. The expense of packing and shipment will not exceed \$500.00 and will probably not be more than \$300.00. It should be noted that even the larger of the above amounts would be saved in five years by stopping the present storage charge of \$120.00 per year.

Respectfully submitted,

ALFRED V. KIDDER,
Treasurer.

REPORT OF THE EDITOR

During the absence of the editor for about eight months his duties have been carried by Associate Editor Gifford, assisted by A. H. Gayton who has been added to the editorial staff as a part-time paid assistant.

One memoir, of forty-two pages, has been issued during 1924. It is Dr. Elsie Clews Parsons' "The Scalp Ceremonial of Zuñi." Dr. Parsons has generously borne the expense of publication.

One of the editorial objectives during 1924 has been to bring the *American Anthropologist* back to its proper schedule. Although the 1924 numbers have all appeared late, it is hoped that the 1925 numbers will appear on schedule, thus allaying the dissatisfaction among certain subscribers.

During 1924 there has been a scarcity of copy for the *Anthropologist*, a condition which it is hoped our contributors will not allow to recur in 1925. The necessity of asking contributors to pay for illustrations has doubtless been a factor in causing the scarcity of copy.

The review department of the *Anthropologist* has suffered from a lack of reviews of important works of general interest, and has been largely given over to reviews of special works. The reviews of special works are most desirable, but for a well balanced review department we should have also notices of important general works in anthro-

pology. It is hoped 1925 will see this deficiency remedied by the co-operation of our professional members.

Respectfully submitted,
ROBERT H. LOWIE,
Editor.

The Treasurer recommended the following budget for 1925, which was adopted:

Publications.	\$2800.00
Expenses of Officers	100.00
Storage	120.00
Ass't to Editor	420.00
	<hr/>
	\$3440.00

It was moved and passed:

That the Treasurer be instructed to repay from the General Fund to the Permanent Fund the loan of \$1100.00.

That the question of the disposal of back-stock of the *Anthropologist* and *Memoirs* be referred to the Executive Committee.

That the Secretary be instructed to transmit to Dr. William Curtis Farrabee the following resolution: The American Anthropological Association extends to you its warm greetings and sympathy, and regrets that your devoted services in the field have prevented your being with us at this time, thus depriving us of the company of a comrade whose presence is always an inspiration. We have felt your absence keenly, and hope that you will be back at work and among us again before the next annual meeting, at New Haven.

That the Secretary be instructed to record the following resolution: Moved that the Council reaffirms its interest in the American School of Research in Europe and expresses its approval of the work accomplished by the School during the last year.

That the Secretary be instructed to accept with thanks the invitation of the Trustees and Curators of the Peabody Museum of Yale University for the Association to hold its annual meeting at New Haven in December, 1925.

That the Secretary be instructed to transmit to the Secretary of the Smithsonian Institution; to the Secretaries of War, Interior, and Agriculture; and to the Chairman of the National Research Council the report of the Council's Committee on Vandalism in Southwestern ruins.

That certain resolutions introduced by members be referred to the Committee on Resolutions, and be presented to the Executive Committee for final action.

The following committees were appointed:

On nominations: E. A. Hooton, J. R. Swanton, R. J. Terry.

On resolutions: N. M. Judd, W. Gates, H. J. Spinden.

On audits: A. M. Tozzer, E. A. Hooton.

The following new members were elected: Munroe Amsden, Mrs. W. Tyler Browne, S. B. Collins, E. F. Frazier, E. Greenman, E. Kopta, J. L. Maddox, T. Van Solen, L. H. Tibesar, G. B. Wilbur.

ANNUAL MEETING, JAN. 2, 2:30 P. M.

The following list of officers was presented by the Nominating Committee:

President: Ales Hrdlicka.

Vice-President (1928): Marshall Saville.

Secretary-Treasurer: A. V. Kidder.

Editor: R. H. Lowie.

Associate Editors: E. W. Gifford, F. G. Speck.

Executive Committee: A. M. Tozzer, E. C. Parsons, W. Gates.

Council (1928): S. A. Barrett, M. W. Beckwith, R. Benedict, F. Blom, D. Cadzow, C. B. Davenport, E. S. Goldfrank, G. B. Grinnell, E. Gunther, A. I. Hallowell, M. J. Herskovits, A. E. Jenks, N. M. Judd, F. La Flesche, R. Linton, J. H. McGregor, B. Oettking, A. C. Parker, G. Reichard, A. Skinner, R. J. Terry.

Representatives of the Association to National Research Council to serve for three years from July 1, 1925: N. M. Judd, H. J. Spinden.

Delegates of the Association to Section H. of the A. A. A. S.: F. Boas, E. Sapir.

The incoming President appointed the following committees:

On Finance: F. Boas, C. Wissler, E. C. Parsons.

On Publication: F. W. Hodge, J. R. Swanton.

On Program: W. Hough, G. G. MacCurdy, E. A. Hooton.

The following papers were presented or read by title:

Description of a Notched Stone Knife WALTER HOUGH, United States National Museum, Washington, D. C.

A Report on Michigan Archaeology. EMERSON F. GREENMAN.

Paleolithic Collections Recently Acquired by the Beloit Museum. ALONZO W. POND.

Archaeological Problems of the Southeast. J. WALTER FEWKES, Bureau of American Ethnology, Washington, D. C.

The American School of Prehistoric Archaeology in Europe: Summer Session. GEORGE GRANT MACCURDY, Yale University, New Haven, Conn.

- Types of Canoe-Building in Polynesia.* MARGARET MEAD, New York, N. Y.
- Pottery of Northeastern Asia and Northwestern America.* WALDEMAR JOCHELSON.
- Progress of the National Geographic Society's Explorations in Pueblo Bonito.* NEIL M. JUDD, United States National Museum, Washington, D. C.
- The Thea Heye Santa Barbara Expedition.* J. P. HARRINGTON, Bureau of American Ethnology, Washington, D. C.
- The Tule Indians of Panama.* J. P. HARRINGTON, Bureau of American Ethnology, Washington, D. C.
- A Further Discussion of the Variability of Family Strains in the Negro-White Population of New York City.* MELVILLE J. HERSKOVITS, New School for Social Research, New York, N. Y.
- Notes on the Mental Assimilation of Races.* JOHN R. SWANTON, Bureau of American Ethnology, Washington, D. C.
- Observations on Athabaskan Pitch Accent, with Special Reference to Kutchin.* E. SAPIR, Victoria Memorial Museum, Ottawa, Canada.
- The Analysis of Some Fox Rituals.* TRUMAN MICHELSON, Bureau of American Ethnology, Washington, D. C.
- Some Culture Problems of Northeastern North America.* FRANK G. SPECK, University of Pennsylvania, Philadelphia, Pa.
- Ethics in North American Mythology.* RUTH BENEDICT, Columbia University, New York, N. Y.
- Tewa Ceremonial in New Mexico and in Arizona.* ELSIE CLEWS PARSONS, New York, N. Y.
- Methods of Burial in the Mayan Area.* OLIVER RICKETSON, 91 Mt. Vernon St., Boston, Mass.
- A Comparison of Kwakiutl and Nootka.* E. SAPIR, Victoria Memorial Museum, Ottawa, Canada.
- Chickasaw Witchcraft.* JOHN R. SWANTON, Bureau of American Ethnology, Washington, D. C.
- Sorcery and Conception of Disease among the Eskimos of St. Lawrence Island, Alaska.* RILEY D. MOORE, Washington, D. C.
- Mongolians and Mongoloids.* CHARLES B. DAVENPORT, Carnegie Institution of Washington, Department of Genetics, Cold Spring Harbor, N. Y.
- Anthropology and the Endocrine Glands.* LOUIS BERMAN, 993 Park Ave., New York, N. Y.
- The Weight of Organs in Relation to Race, Sex, Stature, Age and Nourishment.* R. BENNETT BEAN, University of Virginia, University, Va.
- The Life Cycles of Hair in Selected Regions of the Body.* MILDRED TROTTER, Washington University, St. Louis, Mo.
- Anthropological Studies on the Large Intestine.* E. P. MILOSLOVICH, Marquette School of Medicine, Milwaukee, Wis.
- Variability in Fetal and Adult Life.* ADOLPH H. SCHULTZ, Carnegie Institution of Washington, Department of Embryology, Baltimore, Maryland.
- The Azilian Skeletons of Montardit (Ariege) France.* RUTH O. SAWTELL, Radcliffe College, Cambridge, Mass.
- The Medial Epicondyle of the Humerus in White and Colored Races.* R. J. TERRY, Washington University, St. Louis, Mo.

- Methods of Recognizing Scapular Types in the Living.* W. W. GRAVES, St. Louis University School of Medicine, St. Louis, Mo.
- The Anthropological Position of the Armenians.* FRANZ BOAS, Columbia University, New York, N. Y.
- The Results of Race Mixture in Hawaii.* L. C. DUNN, Agricultural Experiment Station, Storrs, Conn.
- Preliminary Observations upon the Racial Hybrids of Norfolk Island.* H. L. SHAPIRO, Harvard University, Cambridge, Mass.
- Notes on the Physical Anthropology of the Samoans, Tongans, Marquesans.* TRUMAN MICHELSON, Bureau of American Ethnology, Washington, D. C.
- Some Observations and Measurements of the Indians of Labrador.* A. IRVING HALLOWELL, University of Pennsylvania, Philadelphia, Pa.
- The Length of a Human Generation.* ANITA NEWCOMB MCGEE, Stoneleigh Court, Washington, D. C.
- America's Most Elaborate Speech Correction Department.* W. B. SWIFT, Boston, Mass.
- Symbolism of the Portsmouth Works.* STANSBURY HAGAR, Brooklyn, N. Y.
- A Critique of Theories of Social Organization in Australia.* D. SUTHERLAND DAVIDSON, Philadelphia, Pa.
- A Comparative Study of a Spanish Version of the Old Persian Tale of Goshti Fryana.* AURELIO M. ESPINOZA.
- The Gullah Negroes of the South Carolina Coast; a Peculiar and Highly Specialized Racial Group.* REED SMITH, University of South Carolina, Columbia, S. C.

ALFRED V. KIDDER,
Secretary.

ANTHROPOLOGICAL NOTES

At the joint meeting of the Section of Anthropology and Psychology of the New York Academy of Sciences and the New York Ethnological Society held on October 27, 1924, Professors Franz Boas and Marshall Saville reported upon the Congress of Americanists held at The Hague and at Göteborg during August, 1924.

H. L. Shapiro, Bishop Museum Fellow, is making a study of the inheritance of physical and mental characteristics, as represented by the descendants of the "Bounty" mutineers on Norfolk Island. He had expected to include Pitcairn Island in his field of study, but bad weather prevented a landing there. Because of their unusually full records of miscegenation, these islands offer favorable opportunity for this study. *Bernice P. Bishop Museum, Bulletin.*

Warren K. Moorehead sailed for Europe on September 13 to paleolithic and neolithic sites in France, Belgium, Italy and England. Collections of specimens illustrating the prehistoric life of man will be made.

On October 2nd Dr. Robert H. Lowie delivered a lecture before the Vienna Anthropologische Gesellschaft entitled "Individuum und Gesellschaft in der Religion der Naturvölker."

Under the authority of the Research Committee of the Archaeological Society, Dr. John C. Merriam, Chairman, and Dr. Carroll examined with Professor MacCurdy the prehistoric cave and rock-shelter known as Castel Merle in the commune of Sergeac, thirty minutes from Les Eyzies, considered by Dr. Hrdlicka and other authorities as perhaps of equal promise with the now famous prehistoric sites of the region, and concluded a ten-year lease from the owner, M. Castenet, with sole privilege of excavation and control of the finds. This was made possible through the generosity of Col. William Eric Fowler, one of the trustees of the society.

The society entered upon an agreement with the American School of Prehistoric Research to conduct excavations which began at once in charge of Professor MacCurdy, who has already announced the discovery of numerous prehistoric flint implements in addition to faunal remains. Half the archaeological specimens found on the site are to be deposited with the U. S. National Museum as the property of the Archaeological Society of Washington.

Art and Archaeology.

Dr. Walter J. Fewkes, on November 13, gave a talk on Indian cliff houses which was broadcasted by the Smithsonian Institution.

Professor George Grant MacCurdy has recently returned from Europe where he has been conducting excavations near Bordeaux and at Solutre since this spring. He brought with him a collection of relics of men and animals of prehistoric age.

The Norwegian Institute of Comparative Cultural Research, to which the State and Kristiania Municipality have granted 1,000,000 kroner each year, was opened September 3 in the presence of the King.

The white Indians of the Darien region of Panama have been given a preliminary inspection by a committee of scientists composed of Dr. Ales Hrdlicka, anthropologist of the Smithsonian Institution, as chairman; Dr. Charles B. Davenport, of the Station for Experimental Evolution, Cold Spring Harbor, L. I.; and Dr. C. W. Stiles of the U. S. Public Health Service. The committee in a communication to R. O. Marsh, the explorer who discovered the White Indians, recommends a thorough study of the newly found people in their own land by an expedition of scientists. The committee's letter follows:

"The committee of Drs. Hrdlicka, Davenport and Stiles, which you desired to take charge of the study of the 'White Indians' of Panama whom you brought to Washington for the purpose of investigations held a meeting after these Indians were examined last Friday at which the whole matter was discussed and the following conclusions were arrived at:

"The problem of the 'White Indians' is one of much scientific interest, but its satisfactory solution is only possible by a detailed and all-sided study of these people and their families in their own country.

"The committee is of the opinion that these investigations should be conducted simultaneously by anthropology, genetics and pathology.

"In order that the results may be satisfactory, it is requisite that the research should be carried on by experienced and reliable men, whose findings will be accepted with confidence by their colleagues.

"The first condition for a successful carrying on of the work should be, in the opinion of the committee, the training during the remainder of the year of two or three of the persons now in your

party in the English language and such terms as it may be necessary to use with the Indians. Considerable questioning will have to be done, particularly by the anthropologists and the geneticists, which will be quite impossible without well-qualified interpreters. Two of the men of your party, the fathers of Margaret and Alfred, would seem particularly promising in this direction. It is felt that the two and one-third months remaining of this year would be sufficient to form these men into invaluable interpreters for the scientific party.

"The committee would appreciate a statement from you as to whether or not you desire to take charge of whatever further work is to be done on these Indians."

Mr. Marsh stated recently that he intended to cooperate in every possible way to facilitate carrying out the recommendations of the committee.

Science.

Swedish Anthropological Excavations. Three skeletons of persons who died 4,500 years ago in Sweden are among the many valuable relics of the Stone Age which Swedish archaeologists have unearthed this summer in their assiduous efforts to reconstruct Sweden's pre-historic past. Other objects among the new finds now being studied are weapons, tools and pottery from the Stone Age, funeral urns, bronze axes, swords, etc., from the Bronze Age; remains of workshops in the Iron Age, hoards of gold and silver treasures amassed in the Viking Age, and various relics that shed light on medieval life in Sweden.

Another interesting find, made earlier in the summer while excavating in the market-place of the ancient town of Visby, were the remains of a workshop in which bone objects had been made. Antlers of moose and deer in various states of manufacture, and various horn objects such as combs, chisels and punches, were found. These objects, it is said, belong to the latter part of the Iron Age. Relics of medieval times, when Visby was in her prime, are frequently found, the latest being a domestic aquarium, in which, according to custom, fish were preserved alive until the time when they were to be served up in a favorite dish for some merchant prince of the city. Four or five aquariums of this type have previously been found in Visby.

A curious and unique object previously found in the province of Halland, is a flint saw from the Stone Age. And another object of

special interest in the Study of Stone Age civilization in Sweden is a grindstone for the sharpening of stone tools and weapons, which has been found this summer near Piteaa, on the Gulf of Bothnia. Piteaa is only about sixty miles south of the Arctic Circle. The curious appearance of this grindstone has led the experts to the theory that it was once used by the Lapps as an idol—a strange elevation in the service of a common object that had lost its practical utility at least 3,000 years earlier.

At Laholm were also found interesting relics of the Bronze Age, dating back to 1,500-1,000 B.C. The finds include a beautiful bronze sword nearly two feet long, and two exquisitely shaped burial urns, of which one was about one foot in diameter. Bronze Age antiquities of great value will probably be unearthed at Schoeg, between Trelleborg and Falsterbo, on the most southerly tip of Sweden. Bronze axes were found on this site half a century ago, and excavations now begun have already yielded hundreds of objects. The finds date back to 1,500 B.C. The prehistoric burial grounds at Schoeg are believed to be haunted, and it figures in a great number of ghost stories and weird legends that are part of the folk-lore of this region. Contrasting with the severe and gloomy character of the preceding ages in the civilization of Sweden is the picturesque and romantic Viking Age. The Viking relics found this summer include coins and ornaments of silver and gold that testify to the far-flung adventures and commerce of the daring seafarers of the ninth and tenth centuries A.D. Thus at Igeloesa, in Skaane, a farmer recently came across a buried treasure of silver money, 2,037 coins in all. He has just delivered the treasure to the government, and, according to law, has received the value of the silver in weight, or about \$86.00, plus one-eighth for the "antiquity value." Most of these coins are English, dated during the reign of Aethelred II, 916 to 978 A.D., and are doubtless part of the tribute money which the Viking raiders exacted at this time from England. The other coins are Irish, German and Arabic. A lot of Arabic coins of this period have also just been found in Ytterenhoerna, in the province of Soedermanland. Between twenty and thirty thousand Arabic coins in all have been found in Sweden and testify to the close commercial relations of the Vikings with the Near East as well as with Western Europe. *Science.*

Dr. N. H. Darton, of the United States Geological Survey, has returned to Washington after an extended examination of the ruins

of the archaic temple of Cuiculco, twelve miles south of the city of Mexico, for the purpose of determining their age and relation to the surrounding lava flow. The investigation was made for the National Geographic Society, which is cooperating with the Mexican government in unearthing the ruins.

At the first meeting of the Anthropological Society of Philadelphia inaugurating the year 1924-25, the following Officers were elected: President, Prof. A. J. Uppvall; Vice-Presidents, Dr. A. Irving Hallowell and Prof. E. M. Fogel; Secretary, Mr. E. P. Wilkins. Last year there were 48 active and 5 corresponding members on the rolls. The following speakers gave addresses during the year: Prof. A. J. Uppvall, Explorations in Iceland. Dr. J. A. Mason, Explorations in Santa Marta, Columbia. Prof. Franklin Edgerton, The Bhagavad Gita. Dr. Spencer Trotter, Peoples of the Western Pacific. Ndapis danda Kai Wanga, Secret Societies of West Africa. Prof. W. W. Hyde, Greek Voyages to the Atlantic and Indian Oceans. Prof. E. W. Burlingame, Mediaeval Sources of the "Jackdaw of Rheims."

Mr. Alfred I. Hallowell received the degree of Doctor of Philosophy in Anthropology at the University of Pennsylvania in June.

Neill M. Judd, Curator of American Archaeology, United States National Museum, returned to Washington September 30th after having been engaged for four months in continuation of the National Geographic Society's explorations at Pueblo Bonito, Chaco Canyon National Monument, New Mexico. The recent investigations constituted the fourth season's field work of the five year project previously noted in the *Anthropologist*. Besides a creditable collection much new data bearing on prehistoric Pueblo peoples of the Southwest was gathered; it is felt that the 1924 explorations have proven the most profitable of the series.

South African Notes. In the University of Witwatersrand, Johannesburg, Mrs. R. F. A. Hoernle, who will be remembered at Harvard, is lecturing on social anthropology and ethnology. She is preparing for publication a monograph on her field-work among the Nama Hottentots.

Dr. G. H. S. Rossouw of Stellenbosch and Chicago Universities, is giving a short course in social anthropology at the Transvaal University College, Pretoria.

Dr. A. R. Radcliffe-Brown at the University of Cape Town gives first and second courses in social anthropology for the degree of B.A. and a course leading to the degree of M.A. in the same subject. Each course contains from eighty to one hundred class meetings. The syllabus includes general anthropology, ethnology of Africa, general social anthropology (elementary and advanced) and the social organization and religion of the Southern and Eastern Bantu.

The Ama-Xosa of the Transkei will be visited by Dr. A. R. Radcliffe-Brown on an extended field trip during the present year.

A PROPOSED LINGUISTIC SOCIETY

November 15th, 1924.

Dear Colleague:

The undersigned students of language believe that the time has come to form a society which will enable us to meet each other, give us opportunity for the exchange of ideas, and represent the interests of our studies.

The existing learned societies in related fields have shown hospitality to linguistics; they have patiently listened to our papers and generously printed them. For these and other reasons, students of language will, it is hoped, maintain their allegiance to such societies. Nevertheless, the present state of things has many disadvantages. The most serious, perhaps, is the fact that we do not meet. We attend the gatherings of such societies as the American Philological Association, the American Oriental Society, the Modern Language Association (whose several sections are, in this regard, virtually distinct societies), the American Anthropological Society, and so on. This divides us into groups across whose boundaries there is little acquaintance. No one can tell how much encouragement and inspiration is thereby lost.

Other considerations will suggest themselves. The standing of our science in the academic community leaves much to be desired. A medium of publication devoted entirely to linguistics might, at some future time, be very helpful.

It is planned that the society meet variously with the several societies in related fields.

The undersigned invite you to membership in a linguistic society with some such name as *the Linguistic Society of America*, to be organized at the AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

CITY, on Sunday morning, DECEMBER 28, 1924, at 10 o'clock. Beside the business of organization, there will be scientific papers by some of the leading linguistic scholars of our country. Professor Roland G. Kent has consented to act as presiding officer.

If you wish to become a member of this society, please notify one of the organizing committee (L. Bloomfield, G. M. Bolling, E. H. Sturtevant), stating also whether you expect to attend the organization meeting.

- LEROY C. BARRETT, *Trinity College*.
HAROLD L. BENDER, *Princeton University*.
LEONARD BLOOMFIELD, *Ohio State University*.
MAURICE BLOOMFIELD, *Johns Hopkins University*.
FRANZ BOAS, *Columbia University*.
GEORGE M. BOLLING, *Ohio State University*.
CARL D. BUCK, *University of Chicago*.
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LOUIS H. GRAY, *University of Nebraska*.
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C. M. LOTSPEICH, *University of Cincinnati*.
TRUMAN MICHELSON, *Bureau of American Ethnology*.
WALTER PETERSON, *Redlands, California*.
EDWARD PROKOSCH, *Bryn Mawr College*.
EDWARD SAPIR, *Victoria Memorial Museum, Ottawa*.
EDGAR H. STURTEVANT, *Yale University*.
JOHN R. SWANTON, *Bureau of American Ethnology*.
BENJAMIN I. WHEELER, *University of California*.

AMERICAN ANTHROPOLOGICAL ASSOCIATION

OFFICERS AND MEMBERS 1925

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 VICE-PRESIDENT, 1926: F. C. COLE, Field Museum of Natural History.
 VICE-PRESIDENT, 1927: G. G. MACCURDY, Yale University.
 VICE-PRESIDENT, 1928: MARSHALL SAVILLE, Museum of the American Indian, Heye Foundation.
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 EDITOR: ROBERT H. LOWIE, University of California.
 ASSOCIATE EDITORS: E. W. GIFFORD, F. G. SPECK.
 EXECUTIVE COMMITTEE: The President, Secretary-Treasurer, Editor (*ex officio*), and
 A. M. TOZZER, E. C. PARSONS, W. GATES.

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 TERRY (1928).

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BY WALDEMAR BOGORAS

INTRODUCTION

SHAMANISM along with animism represents not only a special part of the religious conceptions of humanity. It represents a system of primitive mentality, a complex of ideas and perceptions of external things, material and psychical. One may therefore analyze shamanism from the point of view of its prevailing ideas and fundamental perceptions. One may discuss the mathematics, physics, art, and philosophy of shamanism.

I want to examine in this sketch the ideas of space and time, as represented in shamanism and generally connected with the primitive conception of the world. I came to my plan when following the ideas of the newest physics as to space and time in their mutual relation. While perusing some works of Einstein, Minkowski, Mach, the Russian professor Umov and others, I came to notice certain coincidences, more or less unexpected. Namely, when these scientists tried to transform their abstract formulae into more concrete combinations of psychical facts the material preferred by them closely resembled some shamanistic stories and descriptions, that are spread among primitive peoples in Asia and America. In a way one could possibly say that the ideas of modern physics about space and time, when clothed with concrete psychical form, appeared as shamanistic.

Let us take some well-known combinations mentioned in several works of modern physics.

Case 1. Let us assume [says Prof. Umov in one of his lectures] that all of us assembled here, including even myself, tired with the exposition of this matter, went to sleep and in our sleep did not notice that this room began

to move in space with equable rectilinear motion, having the velocity of light. What would be the effect of this motion, when we awake again?

After the room has moved on with the velocity of light, I could not awake at all or rather by awaking would last the whole of eternity; within my mind will freeze the same dream which occupied it in the first moment of the motion. I have lost the faculty of judging and of spontaneous movement. I remain in the same unchanging posture. The forces sustaining life came to inertness, as well as similar forces destroying life. The same thing happened with all of you, and with all other forces which formerly were active in this room. Your watches came to a standstill. Time does not exist any more for us. We with our frozen minds and perceptions have no more part either in life or in death. Our fate is immortality.

What is the inference we must deduce from this ever-frozen state?

For whom are our ever-moving doubles immortal? They are not immortal for themselves. They simply dream on and have the same kind of a dream and feel themselves exactly as well or as ill as we feel ourselves when dreaming in the usual manner. They are immortal not for themselves, but for us who stay in this room in the usual condition and meditate on their manner of being. It is for us, as outside onlookers, that all watches and clocks in this moving room came to a standstill, and all processes going on within its space appear as infinitely slow. We shall turn old, shall come to our death, but for our doubles the same moment will continue as before. Then what has become of the usual human idea of time? Whither is gone the absolute sense which we attribute to this idea?

This remarkable description by Professor Umov fully coincides with the well-known legend of the Sleeping Beauty. In the enchanted castle in a very similar manner time came to a standstill and a moment of the life of the sleeping people turned to an eternity to the outside observers.

Case 2. The phenomena of life are simply the pictures of a cinematograph. Each separate world, each plane has a cinematograph of its own. The film-line on the apparatus moves on with a certain speed and pictures change with the same speed and the onlooker gets a sensation of life action. Men move, suffer, the drama develops itself, hours pass. The time of this action, the passing of hours, the velocity of men's actions, and therefore the velocity of their mind and judging, for the perception of the outside onlooker depends wholly on the velocity of the motion of the film-line of the cinema apparatus. But the men in the pictures can not perceive any change whatever in the time of their acting. They are unable to discern whether the time moves on more slowly or more swiftly.

A figure on the cinematograph of some other planet observes the pictures of the cinematograph of our world. He will most certainly perceive the passing of pictures quite differently from our usual earthly perception. One must understand how to transform the perception of pictures from one world to another, from the onlooker inside of the picture to that of the outside of it

Case 3. A traveler moved away from the earth with the speed of 14/15 of the velocity of light, i.e., of 280,000 klm. per second. After forty years of movement his watch, i.e., his time, would be 27 years too slow. This means that if he was, before leaving, say, 20 years old, then now, after forty years of moving, he would be only 33 years old, and if, for instance, he had left on the earth an infant son, he would be younger than his own son.¹

I will produce later on various instances from the circle of shamanism, closely resembling these scientific surmises.

The reason of this resemblance lies evidently in the fact that the primitive mind and the modern mind have after all the identical faculty of perception which works on the same basis of the connection of subject with object, of the facts of the world spiritual with those of the world material.

A few words more.

The greater part of the facts to be analyzed here will be taken from northeastern Asia and refer to the tribes of the Chukchi, the Koryak, the Yukaghir and the Asiatic Eskimo, as examined by myself. Corresponding material certainly could have been taken also from other primitive tribes of various countries and continents. Still I prefer the North Asiatic data, as being known to me much more intimately.

On the other hand, in the second part of the paper I will transfer the analysis to more civilized and modern peoples and religions.

I

The primitive conception of things has upon the whole a religious character. The natural appears at the same time as supernatural, and the ordinary as extraordinary. The phenomena are explained mostly in the way of magic and of religious incarnation.

Thus, for instance, the chase, so important for primitive man, is not conceived as a natural competition of the hunter and the animal in strength, skill, and cunning. The chase represents far more a competition of man and animal in magical knowledge.

¹ Umov, N. A. The characteristic features and problems of modern scientific thought. Diary of the Second Mendeleyev Congress of Chemistry and Physics, Petersburg, 1911, No. 5, p. 14 ff.

The success of hunting depends on witchcraft, on supernatural influence, on formulae, on incantations.

I say "supernatural" because the primitive man, although he usually mixes up and transposes the natural and the supernatural, still has an idea of their difference. The hostile spirit whose usual pursuit is hunting for human souls, and who after catching a soul, chops it to pieces, cooks it in a kettle and feeds its children with it, is nevertheless essentially different from the usual human hunter. This is precisely the difference of the supernatural from the natural. I will speak of it later on with more details.

Witchcraft binds up the will of the animal, makes it "well-minded," kind or simply obedient to man and in any case susceptible, "soft to the blow." If it is not used, the missiles will not hit the game, and the wound produced by the blow will not be mortal.

Thus the Lamut, when surrounding a bear-lair in winter, sing: "Grandfather, Old One, Our Grandmother, and the older sister of yours, Dantra, ordered you saying: 'Do not frighten us! Die of your own choice!'" If the bear is "well-minded" he will obey the prayer and present of his own will the side to the spear. He will die of the first blow and consequently his death will be easy and even pleasant, "similar to tickling." An "evil-minded" bear may stand on his defence and even kill a hunter or so; and therefore his death will be painful and bad.

The Eskimo hunters at Indian Point said to me: "It is a mistake to think that women are weaker than men in hunting pursuits. Home incantations are essential for the success in hunting. In vain man walks around, searching; but those that sit by the lamp are really strong, for they know how to call the game to the shore."

In connection with this I have a native illustration in which a person apparently characterized by her pose as female performs incantations on the shore at the point of a cape, causing a herd of walrus to come from the open sea and to approach the shore with all possible speed.

An old fox hunter of the Chukchi tribe, who was setting up spring-traps in the woods around our dwelling, used to tell me:

"I have no need to visit my traps every day. I know without this when a fox is caught there. That very night I have a dream of a red-haired woman who wants to assault me. And when in the end she is subdued and we have love, then it is a sign that a fox is caught in the trap."

This remarkable tale shows a magic action brought up in a dramatical form and moreover in a dream. These two details I will take up later on. The sexual element must also be noticed. Still this side of the question does not come within the limits of the present study.

Similar cases of a connection of success in hunting with magic and witchcraft may be indicated among other peoples. Thus A. Skinner writes:

The Menomini not only resorted to every practical device in the way of snares and traps for taking game, but employed a number of mystic formulae to overpower their quarry by means of sympathetic and contagious magic. To the present day, no hunter, however skilled, believes for a moment that he could be successful without the aid of sacred charms and incantations.²

The whole life of primitive man is wound over with all kinds of incantations. The incantation is a symbolic action, something like a child's or an actor's play, a conventional formula with a dramatical active realization. In passive state the incantation has no real force whatever. But when enacted, it has a power prevailing over anything.

There is no moment of life, no action too trifling to have its special incantation. A Chukchi man driving a reindeer or dogs will make use of an incantation to shorten the distance ahead. In like manner, a hungry person eating with others from the same dish will try by an incantation to make the motions of his rivals slower than his own. Women apply incantations to their sinew thread in order to make it stronger. And even a man who has forgotten the magic formula will resort to another incantation which will be helpful in recalling to one's mind things which are forgotten.

A number of incantations relate to matters of love, birth,

² A. B. Skinner, *Menomini Culture*, p. 13.

death, funeral rites, etc. Just in the same way Skinner says of the Menomini:

There are at least eighteen different love charms; medicine for keeping married couples faithful, for driving enemies insane; for winning at gambling, racing, etc.; medicines to thwart sorcerers; for taking game and fish; to guard against the snake bite; and insure the bearer against injury from the missiles of medicine bags shot by unknown foes.³

A typical instance of an incantation enacted dramatically is represented in the Chukchi cure by means of the so-called "Upper world old women." The shaman goes into the open air and, at some distance from the house, he finds two grassy hummocks, which he supposes to be the houses of the two "Old Women of the First Creation," naturally in the Upper World. With the Old Women he holds long dialogues full of persuasion, then plucks from each hummock a grass-blade and brings them back to the patient's bed. These personifications of the magic Old Women must help the suffering. After performing the ceremony in fullest detail, as if the grass blades were real human beings, he carries the the Old Women back to their homes, i.e., to their respective hummocks and leaves with them also the pay for the cure, a strip of sinew, a shred of meat, etc.

Another dramatical ceremony or even a complicated drama is the so-called "resurrection of killed animals" which in varied forms exists in all parts of the world among the numerous peoples more or less primitive.

The Chukchi, Koryak, Eskimo and Kamchadal varieties of this ceremony are represented in the so-called "Thanksgiving ceremonial of heads," in the "Whale ceremonial," etc.

In these ceremonials heads or skulls of animals killed during a certain period, whole frozen carcasses, or again some bits taken from a carcass, eye-balls, a piece of a heart, a tip of the skin from the nose, from a flipper, are placed together on the skins or grass mats, close to the fire. These are the "guests" of the ceremonial. Strips of long soft grass are laid near by, fur tassels are tied to the skulls or carcasses. Meat of various kinds is given to the guests. "Let the guests warm themselves," say the people,

³ *Op. cit.*, 67.

"when they feel warm, they will take off their fur overcoats." This relates to the frozen carcasses, which have to be thawed out before they are skinned. Grass represents a new coat given to the "stranger." The mouth of the skinned animal is filled with fish eggs. The mistress of the house cuts up "pockets" in the flesh of the carcass and fills them with more fish eggs, as a present to the guest. The people exclaim: "Tell your friends that it is good to visit yonder house. Make them to come and to be treated in a similar manner!" Then the guests repose. Loud noises are forbidden, "lest the guests should be awakened from their repose." The drums are beaten lightly. The people sing in a subdued manner. The participants divide into two parties. One, formed of women, represents the "guests," another, formed of men, represents the hunters. The dance begins. Women whine, bark, snort, roar, representing the animals. Men say: "We have not killed you." "No, no," answer the women. "Stones have rolled down and killed you." "Yes, yes!" After than the skulls, bones and everything are gathered and carried out into the open. The bones and other particles of land-game are left on the land, the particles of fish and sea-game are thrown into the sea. The people exclaim: "The seals are gone to the sea. The whale is gone to the sea." Thus the spirits of the animals are conciliated, their material selves are resuscitated and the returning of themselves and of their companions of the same species is secured.

Animism represents one of the most precise and developed forms of the primitive religious conception. Its essential feature is that the universe is supposed to be filled with spirits. These spirits are in general similar to men. Still they are not men, but spirits, different from mankind. The soul hunters mentioned above will come in the night time to a human dwelling, driving black reindeer, invisible to men, but breathing fire through their nostrils. The spirits will put their nets around a tent and then poke with long poles under the skirts of the tent in order to drive the little souls of the sleepers away from under the protecting cover of the inner sleeping room. They cook and eat the souls, as mentioned above. They have wives and children. They live in tribes and villages. And they even conceive children, who are born and die, exactly like mortal men of our lower world.

For all that the spirits are different from men. They are usually invisible, though they may be seen by some, for instance, by a shaman, who in his turn is invisible to them. The shaman is a spirit-hunter just in the same way as the spirit is a man-hunter.

The other differences of the spirits from the ordinary men are still more prominent. The motion of spirits and also of shamans, who are able in everything to contest with spirits, may be called in some ways a three-dimensional motion.

Primitive man usually conceives the universe as being arranged in three tiers, lying one above the other. The uppermost tier is the World above, the nether tier is the World below. The earth surface inhabited by mortal men is the middle tier. On the various Chukchi and Eskimo sketches in my collection the three tiers of the universe are represented by three longitudinal stripes, or three concentric circles with corresponding figures placed in every one of them.

Two remarkable Chukchi sketches represent the map of the sky with luminories and constellations and even with projected directions of the compass.

One is executed on the plane. It is a Mercator's chart of the Chukchi sky. Three worlds are represented by three concentric circles. Our world is the middle one. The sky is the innermost. It signifies that the sky is on top. The Polar Star stands in the center. On the left hand are the Sun and the Moon. The latter is represented as a man holding the lasso with two human captives standing beside him. Beneath the Moon is located the Moon Mountain of Darkness. At the bottom stands a house made of earth and belonging to the spirits. Two spirits walk on all fours. A large worm wriggles above the house, its tail armed with a long sting. The Left-hand Dawn has a low wooden house with two murdering spirits, one tied on each side. The General Dawn has a house raised on a platform, which is supported by a single pole. Four dogs are tied on the sides of the house. In the region of the Right-hand Dawn, at the left of the sketch, lives Dawn-Top-Woman, in a small house, which is also supported on a single pole. Under her feet is Venus.

The second sketch represents the spherical chart of the starry

sky. The designer evidently wanted to show the spherical form of the sky. The Polar Star stands as before, in the middle and two medial lines cross over through it, indicating the four directions of the compass. The Dawn, the Evening and the Darkness have worlds of their own, represented as large mountains. The Dawn, placed in the left-hand corner, has rays around his head. He holds in his left hand a tray that was offered to him full of sacrifice, and in his right hand a fox which he is going to give in exchange. From his left another fox is approaching, and on his right a dog which has been sacrificed by men sits looking at him. These two animals are also to be exchanged. The Sun and the New Moon stand opposite each other. Among the stars can be discerned the outlines of Orion and of the Pleiades, the Milky Way, "Heads" (Arcturus and Vega).

The three tiers may turn to five, seven, and nine, etc. The middle tier remains the same but the upper and nether tiers may cleave each in two, three or even more branches. The Sub-Worlds are inhabited alternately, one branch by deceased men, another by genuine spirits. Still the symmetry between the upper and nether worlds, taken as units, is maintained. The arrangement of things in all those worlds, upper and middle and nether, is essentially the same to the meanest detail. This is expressed with great force in the Chukchi tale of the Scabby Shaman:

"In which world is there more life, in the upper or in the nether one?"—"Just equal!"—"In which world are there more fish in the sea, more birds in the air, more game on the earth?"—"Just equal!"—"Blades in the grass, leaves in the wood?"—"Just equal!"

At the same time the Upper World somehow coincides with the region of sunrise and the East, of zenith or midday, and also with all regions connected with light and the sun, and with the direction up-stream and to the right of the person speaking.

The Nether World coincides with the Region of Sunset and the West, of nadir and midnight, i.e., with all the regions connected with night and darkness (and also with the moon), with the direction down-river and to the left of the person speaking. Such coincidence of fully diverse regions is possible only inasmuch as all the conceptions of space and direction mentioned, are combined

together not in reference to correlative space and time, but, as we shall see later, in some other fully independent way.

In any case the idea of the three-storied universe has upon the whole a three-dimensional character and is in a way similar to the three dimensions, three co-ordinates of space.

Various tales relate, for instance, how a certain man departed eastward and when under way fully unaware climbed upward so that in the end he ascended to Heaven, or again a woman started westward and in doing this descended underground and got into the Nether World.

The most remarkable feature of the motion of spirits and shamans consists in that they quite frequently move through all three tiers, three dimensions of space. The spirit dives underground, then pops out of the ground and flies up into the air. Therefore the lines of the motion of spirits in the Chukchi and Eskimo sketches have often a wave-like figure. Various tales describe in full detail, how the spirits and the shamans keep up a continuous race in their wave-like three-dimensional motion, and how sometimes it happens that a shaman not skilful enough in this dangerous sport of rising from out of the ground would stick midway on the very edge of a world. His feet are in the underground world, and his head above the ground. Then to save him from this awkward position his more skilful brethren gather all their assisting spirits and the utmost strain of their united forces is hardly sufficient to lift him upward. Some of the details by the way recall the ideas of the mediaeval and modern oculists about certain "passes" which make it possible for the ghost to come over to this world from the world beyond and vice versa.

This three-dimensional motion is quite typical for the spirits. In the séance of Chukchi ventriloquistic magic the first appearance of the spirits is manifested by a buzzing sound somewhere high up in the space in the oblique direction to the right hand from the shaman. The sound gradually increases, swells to a tempest of sounds, sweeps through the apartment and dives underground also in the oblique direction, to the left from the shaman, and then gradually diminishes and dies in the deep.

There exists, however, another kind of between-world motion,

which is a full vertical ascension. This motion rises quite vertically to the Polar Star in the very zenith of the sky. Then it passes through the special hole which lies under the feet of the Polar Star. In ascending further on one may reach the other sky and through another hole to pass into the farther world and so on. The Polar Star is identical in all the worlds, and one hole lies exactly over another like two apertures of the same funnel. In this vertical way ascend the dead when burnt upon the funeral pyre. They ascend with the smoke directly to the zenith. A shaman when wanting to ascend the upper world may also prefer the vertical way. Then assuming the form of an eagle he will soar directly upwards. This is evidently deduced from a direct observation on the rising of the smoke and the vertical flight of the eagle. One must say that this direct ascension mostly belongs to the single, quite unmolested movement. The three-dimensional wave-like spiral-wise motion of spirits and shamans is connected with the idea of strife, of competition.

The wave-like character of the three-dimensional motion explains, among other things, why the shaman, when falling into a trance and starting for the supernatural world will at first be submerged under the ground (with or without the drum). Then he will pass on "from the bottom of the house" and only when far ahead he will suddenly rise up and fly into the air in the usual spiral-line motion.

The three-storied conception of the universe belongs to religious systems of a more developed kind. Thus in Hindu folklore is frequently mentioned the three-world universe, i.e., the World of the Gods, the World of Men, and the World of the Spirits. As to the motion of spirits through all the worlds, the Yakut shamans, according to the latest information, when having a contest of skill, chase each other through all three worlds at once.

I must also mention that the general conception of life and the universe is with primitive men essentially dynamic, kinetic. Primitive man feels his own life chiefly as motion, and the surrounding world appears to him not only ever living, but also ever moving. The practical form of the animistic conception of the world is a combination of spirits of various kinds, ever chang-

ing their shape and position and more especially so in regard to the self of a man.

The well-known fact that primitive art represents all things, especially animals, in constant motion is connected with this general psychical description. On the other hand the eye of the primitive man acts as a kind of cinema machine. And every drawing represents a momentary photograph as if caught in mid-air. No kind of moving remains unrepresented graphically. Even words spoken out are given over with zigzag lines.

II

When passing from the general characteristic of the motion of spirits to the conception of their size and dimension, we come to another remarkable detail. The size and dimension of spirits are essentially relative. They change in connection with various changes of surrounding objects and with the condition of action of spirits, men and shamans.

Men, shamans and spirits in their mutual relations seem to have no definite size. Primitive men are conscious of these unstable, ever changing dimensions. Several Chukchi shamans said to me: "It is puzzling to understand the size of the spirits. You look at a spirit, and he is smaller than a mosquito; again you look, and he is of the size of an ordinary man, and then behold he is sitting on a cliff and his feet touch the sandy beach below. Look at him closely and he is not larger than a finger; look at him at some distance through the fog and he will loom up like a mountain."⁴

The mutual size of men and spirits changes in connection with the character of their mutual approach and with the special conditions of their eventual meeting. A spirit attacking a man, a dreadful soul-hunter appears very large, gigantic, and the men and their souls quite small. The same spirit when vanquished tamed by a shaman, appears on the other hand as quite diminutive. On a Chukchi sketch two spirits are represented as tearing to pieces a human creature. They are large and hairy with plenty of teeth in large gaping mouths. The human figure is small and

⁴ Bogoras, p. 295.

thin. It lies quite passive in their paws. On another sketch a soul-hunting spirit is represented as wanting to enter the smoke-hole of a tent. The men in the tent are sleeping and all of them, by the way, are in a state of sexual excitement. The spirit is very large with thick arms and legs. The men are quite tiny. The sexual moment which is also very interesting does not come within the scope of the present study. An excellent commentary on these Chukchi sketches may be found at the other end of the world in Australian folk-stories about Yarroma.

Yarromas are men of gigantic stature with their bodies covered with hair and having a large mouth which enables them to swallow a blackfellow alive. There are always two of these creatures together, and they stand back to back so that they can see in every direction. Their means of locomotion is by a series of long jumps, and every time their feet strike the ground they make a loud noise like the report of a gun or the cracking of a stock-whip. These men have large feet, shaped differently from those of a human being. When a Yarroma is heard in the vicinity, the people must keep silent and rub their hands on their genitals. Some of the headmen or doctors call out the name of some place a long way off, with the object of inducing the Yarroma to start away to that locality. If this ruse does not succeed, the headmen get sticks which have been lighted in the fire—a fiery stick in each hand,—and strike them together so as to emit sparks, and the Yarroma then disappears into the ground, making a flash of light as he does so. If a man is out in the bush alone, and is pursued by Yarromas, his only means of escape is to jump into a large water-hole, and swim about, because these monsters cannot wet their feet. They sharpen their teeth on the rocks in high mountains, and the natives aver that they know of marks on the rocks. Once a blackfellow went under a fig-tree to pick up figs, when a Yarroma who was hidden in a hollow at the back of the tree, rushed out and caught him and swallowed him head first.⁵

In order to fight with the spirits a human shaman picks from their number some special assisting spirits. These he tames and

⁵ Folk-lore, 1909, p. 485.

subjugates and so makes them his subordinates. This procedure is quite difficult and even perilous. Often the shaman would choose the largest and most dangerous from the spirits, those for instance who feed on living whales, swallow a dozen white bears in one mouthful, or devour all at once a whole herdful of reindeer. The spirits of such tremendous kind will present themselves to his attention and he has to cope with them before all. The taming of these spirits is in a way similar to the taming of wild beasts, lions and tigers. One Changa, an Asiatic Eskimo of the village of Indian Point, who was employed on an American whaling ship and visited San Francisco, saw there in a circus the usual performance with tamed lions and leopards. On my question about his impressions he answered with a single Chukchi word: "Teñelin," "Trash!" And then explained: "The beasts that I am taming are much more dangerous. They are invisible and they are free. And I have no arms nor even a whip, nothing but my word (incantation)."

The primitive men generally when in the darkness are much more afraid of the spirits than of the wild beasts. And the dazzling fire, the vigilant dog give protection first of all against the spirits.

The spirits, subdued by a shaman, however big and terrible they may be, when approaching their new master shrink in size and assume another form, small and harmless enough. Monsters turn into grasshoppers, beetles, moths, tiny mannikins etc. In studying shamanism, this small size of the spirits, assisting the shaman, comes into notice and even produces in the beginner something like disappointment. The spirits come in great numbers, the shaman gathers them into the drum, they shrink together and roll into a ball. Then the shaman shakes the drum. The spirits are strewn asunder. They fill the apartment, buzz and wriggle around, burst forth and covering the whole house with a thick layer protect it against the assaults of enemies.

This reminds one of the small black jackals in Flaubert's *Temptations of St. Anthony*, which grow smaller and smaller and then fill with their wriggling mass the hermit's cell. Similar to this are also the swarming imps, and the vermin of the alcoholic visions. I will speak about these later on. A village wizard of

Great Russia gives to a suffering woman a little enchanted water where on looking closely one may discern a whole swarm of the smallest imps not larger than a pin head, bubbling up like foam. This is practiced even now everywhere in the country. The assisting spirits shrink up when approaching the shaman. On leaving him and going away they grow larger and soon they assume their former formidable aspect.

The shaman produces an amulet, for instance some small shred of an ermine pelt and wants to send it to fight against the hostile spirits. He blows upon the piece of pelt and it turns into a living ermine. The ermine departs for its task and once upon the way turns again into a large polar bear. The polar bear comes to the seashore and stretches his body, in order to reach the other coast. His hind legs remain on this shore, his head and fore-paws reach across the sea to another shore. In this big shape he may fight the largest spirits of the soul-hunting class.

The elastic condition of the spirits' size is represented on several Chukchi and Eskimo sketches.

Thus on one of them is represented a female spirit in a long flowing mantle with a staff in her hand. She met a man on the sea-ice and asked him for some tallow. And he described her to me as quite big and terrible. On another sketch a ceremonial is represented as taking place in a tent. A male shaman is beating the drum, while the woman dances to it. Shamanistic spirits are seen on the left of the picture, flying to the call. They are a "bird spirit," a "fox spirit" and a peculiar being composed of the two "limb souls" namely of the souls of human hands, severed from the body. They are represented as quite tiny, and the man who drew the picture explained that, though in the shape of the animals, those spirits are of much lesser size than a natural fox and a bird.

Another instance. In the medicine incantation, mentioned above, the Old Women of the Upper World are represented as small blades of grass, plucked from grass-hummocks. The gifts sent along with them are exactly as small and insignificant. Still elsewhere the self-same Women are described as gigantic, occupying the whole space on both sides of the Dawn.

The most formidable spirits of the soul-hunting kind, when vanquished by men, are represented just as small. In one incantation a female shaman shakes and pushes the sides of the tent. The spirits, sitting in a great mass all over the tent, are shaken off and fall down like so many moths. The female shaman gathers them and drowns them into the sea. In other incantations the same spirits, when going to attack a human house, are represented as quite big. They come to a tent, lift themselves on their toes and peep into the smoke-hole directly from above.

Very numerous are the various instances where the Big Assaulting Being changes to a Small Vanquished One and the Small Assaulting Being grows to a Big Vanquishing One.

A spirit comes to a tent and enters the body of a new-born infant or in another variation the spirit is born in the shape of the infant. He rises from the cradle, becomes gigantic, devours his mother and all the people around in the tent, then goes out into the open and swallows the reindeer, the whole herdful of them. He grows continually. He is able to dry up a whole river in drinking.

Another instance. Rintew, a shaman (Chukchi), wants to punish his enemies, especially a certain rival female shaman. He brings to the house a magic chamamoerus berry transformed to a pendant and with it tempts all the women. They snatch at it and struggle for it. Rintew strikes the drum. The drum grows in size, breaks forth from the shaman's hands and covers the smoke-hole. The cloud berry pendant also starts growing. It increases to a knob of the drill, then to a child's head, to a reindeer paunch freshly cut out, to a newly killed seal's body, to a large walrus carcass. Then it fills the whole house, crushes everything and bursts the house-lashings. This gradual increase in the bulk of the supernatural things is very remarkable. We will meet it again later on.

Icelandic Haminja (from *hamr* shape and *fylgja*, to follow) a kind of attending spirit to men, are represented chiefly as gigantic. Thus in Vega Glum's Saga, 950, we find the following episode. Glum saw in a dream a woman of giant size coming to Thwera. When he woke he said, "I think Vigfus, my mother's

father must be dead, and the woman will have been his hamingja who walked higher than the mountains, and his haminja will seek a hiding place where I am.'⁶

These attending spirits were not subdued by men. They would come to a man, as it seems, of their own free will, and sometimes against his desire. Still I do not think that in their daily intercourse with the man chosen by them they were higher than mountains. They were looming in this giant shape when looked at from apart, being alone in their journeys.

The shaman's spirit assistants, for all their smallness, are nevertheless far from being harmless for their own master. When the shaman has sent them for a fight and they cannot overcome the hostile spirits, or more especially the assisting spirits of a rival shaman, they will turn back in full displeasure and assuming their actual terrible shape will slay their own master.

The human souls carried away by spirits and kept there in store for future consumption also assume the most diminutive proportions. In one of the Chukchi tales a boy's soul stolen by spirits walks upon a lamp in the house of his ravishers. It is not bigger than a fire-trimming stick. Its legs are like the thinnest splinters of wood. A shaman, vanquishing the spirits and bringing back such a soul, carries it of course in the same tiny form. So when he wants to put it back into the crown of the patient's head or into his mouth, the soul appears as a small grass-blade, a little stone, a beetle, etc.

It is no doubt much easier for the shaman to manipulate with such insignificant objects. Still the chief reason for the minute appearance of the recovered souls is not the convenience of the shamanistic *leger de mains*, but the shrinking of the soul's size when kidnapped by a spirit.

A Yakut shaman in the same way as the Chukchi one mentioned above, expressed his perplexity about the size of spirits. When remaining in their own world, the spirits are usually big even gigantic. They come to the human dwelling larger in size, though invisible and want to attack. An earthly man, a shaman,

⁶ Custom and Belief in Icelandic Saga. Folklore, 1906, p. 398.

comes to the rescue and tries to drive them away. They are obstinate. But he insists and they are carried away as by the wind and while withdrawing they shrink rapidly in size and become as dead leaves, even as small drops of dew fallen on the grass blades. They vanish altogether out of sight. Then they return home and lo! they loom as big as before.

With the Yakut also the size of a human soul is ever changing. The human soul is represented as very small. A spirit of disease, usually female, comes to a suffering man. She takes a place close to him and extending her right palm smacks her lips: "prrr!" The man's soul falls down into the palm and she bursts with laughter and swallows it in a moment.

Still, if taken alive and brought by spirits to their home in order to be cut and cooked, the soul assumes the size of an average man. "Otherwise there would be too little meat" say the shamans by way of explaining. When rescued by a shaman the soul becomes again very small. In exercising his power the shaman makes the soul come back to his call. It buzzes around and then falls into the extended drum with a heavy thud. Though it is ever so small, it is unaccountably heavy. The shaman catches it up with his hand and swallows it immediately. The next moment he is about to fall down under the heavy weight of the gulp. His assistants from the right and the left catch him by the belt and help him up to his feet.

In the well-known European folk-tale about a contest of a magician with his younger disciple they carry out by turn a series of strange and unexpected transformations. In the end the younger magician scatters himself around as millet. The older magician immediately turns into a cock and pecks at the millet. Then he hops upon a bench and crows triumphantly. One small grain is hidden under the heel of the young princess's shoe. The younger magician is in that grain. He turns immediately into a hawk and tears the cock to pieces.

To the same category of tales belong the stories about the asexual conception of a virgin from a swallowed leaf, a grass blade, a grain, a shred of meat. The hero, demigod, shaman has turned into such an insignificant object and the virgin has

swallowed it unintentionally. Then the swallowed shaman assumes his anterior form and bursts his temporary mother or in a later variation is brought forth like a small infant that grows up immediately.

Other well-known stories of the more cultured period abound with instances of such alternate shrinking and growing of men and spirits in their mutual relations.

In a story from the Arabian Nights King Solomon punishing the Djinn, puts them into some vessels, then seals up the vessels with his magic seal and throws them into the sea. When free the Djinn is as large as a cloud. When vanquished and punished by Solomon, they evidently must shrink in bulk in order to place themselves within a vessel. A fisherman fishes out of the sea such a vessel and breaks the seal. The liberated Djinn comes out from the vessel and assumes his former size and aspect. In order to force the Djinn to enter again into the vessel one must vanquish him by force, or fear, or cunning. Then the Djinn will shrink again and assume his compressed subjugated form.

In another Arabian story of the Magic Lamp, the Djinn appears before their master unchanged in their actual gigantic aspect.

These Djinn are connected with material things. They are called Djinn of the Lamp, Djinn of the Ring, which evidently corresponds to the *genii loci* of an earlier state of ideas. The duplication of these Djinn proves them to be a later variation. There are two parties of Djinn, one of the Lamp, and another of the Ring, and they interfere with each other and even one party destroys the action of the other. This later degeneration of the idea also made the size of the Djinn stiff and unchangeable. Still, when one of the Djinn of the Lamp takes in his hands the whole of Aladdin's palace and carries it over to Africa, just as a toy, the relative connection of dimensions appears again as something quite tangible.

A few more instances may be cited. Among the so-called songs of the Southwestern Slavs, translated by Puchkine from P. Merimée and founded on some more or less genuine Dalmatian tradition, there is one about Marco Yakubovich.

A werewolf comes to a human dwelling. His shape is gigantic but a magic formula drives him away. After a while he comes again. His shape is much smaller, just like a young soldier of the Crown. The magic formula banishes him a second time. He appears the third time in the shape of an evil dwarf, so small indeed that he could have ridden a rat. Still his little eyes glistened wickedly. The incantation drove him away and he came no more.

This is a very convincing instance of how the magic formula in vanquishing a hostile spirit makes him shrink in size.

In Goethe's *Faust* the Genius of Earth summoned by Faust comes in his natural gigantic shape and terrifies the man. Mephistopheles on the contrary wants to agree with Faust and deal with him on equal terms. So he assumes a shape of the same size as that of Faust. The equality of size symbolizes the equality of mutual relation, and even the equality of forces, since after all one cannot say whether Faust will be vanquished by Mephistopheles, or will succeed in freeing himself from his influence.

With the Hindu, Vishnu is a solar god in the shape of a dwarf who with three consecutive strides, conquered all three worlds, that of the Underworld, that of the Earth, and that of Heaven. And with each of these strides his stature grew and finally assumed gigantic proportions.

Along with the hostile spirits the animistic conception includes another category of spirits, which represent the spiritualised form of the objects. These are the so-called "owners," "masters," "interior living men," "souls of the objects," *genii loci*, i.e., spiritualized forms, owners or masters of rivers, lakes, forests, rocks, belong here, also the "masters" of every kind of game, who possess them and rule them, give some of them to a lucky hunter, etc.

Spirits of this category are not as a rule hostile to men. When conciliated, given fair words, brought offerings, they may become benevolent and helpful. In every way the idea of them is not connected with perpetual fight. Even if they tease or annoy some unlucky mortals, they never hunt human souls nor do they feed on such gruesome aliments. As to the size and dimensions of the spirits, they are often represented as having human size. This is

the size and the shape of Greek dryads and river nymphs, the German Undine, South Slavic *vila*, Russian *russalka* (water or wood nymph). In other cases *genii loci* are represented as giants. The German Rûbezahl, Russian Lyeshiy (Forest-owner) are mighty uncouth giants.

In a whole series of cases *genii loci* are represented as small. The Celtic brownie, the house fairy, is represented as small. With the Slavs one form of the house spirits, *Domowoi*, is represented as having unusual size; another form, less frequently known and probably more ancient, "Small neighbor" *Susiedko* is represented as quite small, no larger than a finger. Also along with giant forest-owners exist owners of game species of diminutive size. Such diminutive spirits of game are known among the Chukchi and the Lamut in Asia (while the Yakut spirit of game is a giant) and among various Indian tribes in South America. They ride their game, or drive them with a small sledge. The Chukchi "mouse driver" is a forest spirit of this kind, driving a mouse. His shape appears in the same unusua' form of an edible root, dug out of the ground.

Brownies and other house spirits in a similar manner ride domestic animals, chiefly horses.

The human soul when it is conceived as an owner, a master, an inhabitant of the body, is represented as small even outside of its mutual relation to the hostile spirits. The human soul is represented as a mannikin, as a pigmy image of the usual human shape. This is the case not only among primitive people, but also in ancient Greece (on vases the soul issuing from the body as a pigmy), in Egypt, (*ka* as a pigmy in bas-reliefs) and in India (*Mahabharata* III, CCXCVI. 7).

Separate limb-souls, souls of a hand, of a foot, of an eye, are also represented as diminutive copies of the same members. Perhaps in connection with these votive images of ailing members, cured by the force of the Deity are also of diminutive size.

The small size of the soul, when inhabiting or issuing from the body is probably connected with the sense of its helplessness before the forces of the outward world even when it is not in immediate danger from the spirits.

Out of the ideas connected with *genii loci* and with the owners of things and with other spirits, not essentially hostile to man, human imagination created two parallel series of fantastic shapes, giants and dwarfs. They are in a way classified according to their size. On one side are the Cyclops, Gigantes, Djinnns, German Hünen, Jewish Anakim, Rephaim, etc.; on the other, dwarfs gnomes, fairies, elves, trolls, etc.

The same beings, however, are represented in some cases as giants, in other cases as dwarfs. So the megalithic builders in Sardinia, Germany, the British Islands, are considered as giants, but some traditions speak of them as dwarfs.⁷ Otherwise Giants and Dwarfs are represented as alternating with each other. Thus in Iceland according to the popular chronology the Giants are stated to be very early possessors of the land but to have been driven out by the Little People, who presumably held possession until the coming of the Danes. The latter, in their turn, are represented as Giants, huge and strong and having superior knowledge.⁸

For the most part, however, small shapes prevail. Fairies are more numerous than Giants. And they are represented as "Small Folk," "Little People," "Wee Folk." This led even to a supposition that the fairies are connected with an ancient race of smaller stature dispossessed by tall conquerors. Allowing for every possibility of connection of this kind, an earlier small race does not account for the whole fairy tradition and its origin. Similar beliefs are recorded elsewhere of other beings, mostly small, such as foxes in Japan.

In Formosa, tales are told of a mysterious little people, to be seen in forests, with homes which change into boulders. The Malagasy believe in dwarfs, who come to houses to get milk, who have a small voice like birds, etc.

Among American Indians the belief in tiny spirits of rocks, streams, etc., resembling fairies is widely spread. They dance in

⁷ David MacRitchie, article on Giants in Hastings, *Encyclopedia of Religion and Ethics*.

⁸ Leland, T. Duncan. *Fairy Beliefs from County Leitrim*. *Folk-Lore*, v. VII, 1896, p. 963.

the moonlight, and, when seen, vanish at once. Among the Algonkian tribes fairies cause sleep by striking men with their small clubs. Lenape children were accustomed to hunt in the sand for the traces of Little People, comparable with fairies, or elves of the civilized people.⁹

I want to indicate that the smaller size of fairies is connected with their comparative inoffensiveness versus men. Their folk are retreating before the human kind. They are afraid of human iron tools, of the sign of a cross, etc.

Fairies and gnomes, by the way, have a world of their own, distinct from our human world. Gold received in fairyland when brought to our own world, is transformed into withered leaves, just as the gold of some hidden magical treasure, money received from the fiend, etc., turns into offal, dung, or broken pottery. We will speak of these transformations later on.

Parallel ideas of giants and dwarfs are represented with great force in Swift's *Gulliver's Travels*. Giants and dwarfs with men in between as connecting link are so placed that the relativity of their dimensions appears quite distinct and lucid. And after all it is the same world, the human earthly world. It is magnified in one case and minimized in the other. The world remains the same, only its dimensions change.

In order to avoid misunderstanding I must mention another sort of supernatural shape, somewhat similar to spirits, but still distinct in nature and in manner of action.

These are living spells, magical artifacts created by a shaman from a combination of most disparate materials and then filled with temporary life. The shaman sends this living spell to an enemy in order to lure him into destruction by the influence of its artificial nature set up for the special purpose. A shaman takes a lump of snow, some braided grass and creates a woman white as snow with long braided hair. A piece of wornout skin turns into a beautiful dress. Then the woman departs for the enemy's camp and tempts him somehow on to his ruin. The living spell, being a mere mechanical creation without natural life of its

⁹ Skinner, *op. cit.*, 49.

own, does not obey the rule about the relative change of dimensions. Moreover, in most cases the spell is given a shape of equal size with the enemy to be assaulted, in order the better to subdue him to its insidious influence.

On the other hand the assistant spirits, and various other spirits and shapes of supernatural quality assume strange geometrical forms. Among the Chukchi and the Asiatic Eskimo there exists an idea of the so-called half bodied shapes, halved walruses, seals, or birds, which float upon the water with no corresponding part of the body immersed beneath. In some cases they act as dangerous spells, in other cases they are assisting forces and may give succor to a man on the verge of ruin. A pair of human hands severed from the body and joined together appear also as assisting spirit. Shapes of severed hands appear as magic symbols since the well-known paleolithic designs in the caves.

Still more remarkable shapes appear among the Menomini. Some Unami (a branch of the Menomini) say that the blood in a dead body draws up into a globular form and floats about in the air as a luminous ball.¹⁰

What is the reason of this everlasting mutability of the dimensions of supernatural beings in their relations to men and shamans? Men and spirits must be considered as belonging to distinct worlds separate from each other. We may call them separate "systems" to use the term of the modern physics. The action and reaction of spirits on men and vice versa are kinetic. When acting upon men, the spirits are in constant motion, whether coming or going. The same is true about the shamans when acting upon the spirits.

The active element, the prevailing, the victorious, is represented as big, even gigantic; the passive element, the vanquished, the subdued, is represented as small, diminutive.

All this corresponds in a way to certain formulae of the modern physics, referring to space and dimension:

The universe is a connection of systems. Each system is a separate unit, freely moving in space. Each element (body) placed

¹⁰ Skinner, *op. cit.*, 54.

within a system represents its integral part and the motion of the body is the motion of the system. Dimensions of bodies belonging to such separate systems are determined by the material motion of the systems and their different velocities. The kinetic length is smaller than the geometrical length. The kinetic volume is smaller than the geometrical volume. A rod, reposing in system *S*, appears shortened, when its length is measured from the other system *S* moving by the first one. A ball, reposing in the system *S* appears to the observer from the system *S*, as a flattened ellipsoid of rotation.

These formulae evidently represent the psychological conception of space and dimension. The formulae of the primitive religion about the dimension of spirits and men seem to belong to the same order of conceptions.

Men, when assaulted by spirits, correspond to a rod with a shortened length, observed from a system moving by, and vice versa. Since the velocity of the attacking element is very great, the dimensions of the passive element in another system contract greatly and become diminutive.

It is difficult to tell, how far this analogy really refers to a similar mental position of the observer in both cases.

The chief element taken into account in the mutual relations of men with spirits is the energy, rather of a psychical kind. So the relativity of dimensions of men and spirits seems energetic much more than physical. Still the energy here appears in a way as transformed motion, since the motion is the essential form of assault for a spirit or a shaman. Men and spirits in a passive state as an object of the assault are represented as motionless but even this fully corresponds to the conception of a rod, or a ball reposing in the system *S*.

On the other hand, the shrinking of spirit dimensions, when in subdued state approaching men, is directly opposite to the usual physical way, where a body increases in approaching and diminishes in going away.

This leads to misunderstandings and sometimes to compromises. The hostile spirits are represented as coming to assault men in their actual gigantic shape. When vanquished by a man

(shaman), they immediately take to flight and while underway diminish in size, shrink to insignificance, to drops of dew, to fog, to nothingness. Thus the shrinking in size is combined with the laws of the perspective.

The assisting spirits appear in a shape large enough in size, speak with a man (shaman), and after that rush away with a cry, changing meanwhile to some other shape, equally of smaller size. I will speak of this later on with more detail.

Nevertheless the cases of assistant spirits shrinking in size when approaching their human master, are also quite numerous. What is the psychological meaning of this idea?

One must assume that the primitive observer conceives the world of spirits as quite separate and wholly independent from our own world, i.e., as "a world beyond." The conception of this world is wholly kinetic, but the velocity of its motion is transformed into energy and action and it represents the chief and single measure of the forces thereof. Therefore, in determining the mutual proportions of the elements of the other world to those of our own world in every crossing and collision of the same worlds, the primitive man is guided solely by that feeling of velocity, of energy, of impetus.

On the other hand the modern scientific observer could come back to this primitive conception only when setting aside all the complicated accessories of the same idea, added historically in the development of science.

III

The primitive conception of time represents another series of analogous combinations. There are several indications as to the great variation in the inner and outer perception of the same dimension of time. Thus every dream comprises very large contents within one short second even within a minimal part of a second. The same refers to the last moments of life, for instance, by drowning, hanging, etc., as far as we know from the reminiscences of rescued suicides. Before the dying man in a few short moments there passes with surprising preciseness the picture of his whole life.

Similar instances are known from the impressions of religious ecstasy. A certain hermit, a saint, an ascetic, when looking on the "glory of God," lost the sensation of time. And what he inwardly felt as one short second, proved outwardly to be several decades, or a century. Various stories relate how for such and such a person, for 11,000 sleeping virgins, for Christian youths in Ephesus, the time came to a standstill and when it begins to flow again, the lost interval proves to be long indeed. The last instance is represented in the American story of Rip Van Winkle.

The mediaeval story of the Castle of the Sleeping Beauty in every detail resembles the first instance reproduced from Umov.

On the other hand, in several stories a saint, a hero, etc., passes into a world beyond, and lives over there a series of adventures, sees numerous and varied things; and when he returns to the earth, all these events appear comprised within a few moments.

Fairy tales mention the supernatural lapse of time in the fairy dance or when dwelling in fairyland, which lapse inwardly was felt as a few short hours. On the other hand in many stories the opposite experience is found, "the consciousness of having spent a lifetime during a moment as a result of a fairy spell."¹¹

Primitive shamanism abounds in cases of such contraction or extension of time. Each shamanistic trance lasts only objectively a quarter of an hour or half an hour and subjectively it represents a complicated journey to the upper or the nether world including a series of episodes with abundance of details. When transforming the same time from the inward to the outward dimension it will grow immeasurably and last more than a whole human life. Thus the story mentioned above of a shaman who wanted to ascend to the upper world evidently in the usual psychical state, represents such transformation of inward time into the outward dimension; and a whole human life scarcely suffices for a half of the way. Another story of this kind represents the matter exactly in the opposite way. A shaman, a traveler, sets out for the upper world, or simply for some very distant unknown country of the

¹¹ I. A. MacCulloch, *Op. cit.*, p. 689.

fairyland kind. After a series of adventures he returns home at last. He does not feel his absence as long at all. Nevertheless, when coming home he finds his infant son has a very old grey head, being much older than the hero himself. But in perceiving this startling fact the hero suddenly falls down and dissolves in dust from very age.

This conception of time evidently does not represent a mere contraction or extension of the same interval. On the contrary, we have in this case two ways of measuring time which do not agree with each other. The upper world and our human world have each a time of its own without any mutual concordance. And upon the whole the conception of time of this shamanistic story fully corresponds to Case 3 of the modern physics (see above).

In analyzing more attentively the primitive conception of time of the "other world," we find that it includes two elements generally mixed together, which, however, are liable to be treated separately.

One element is an extension or contraction of a certain interval of time. This depends on the degree of crowding of the said interval of time with numerous and varied sensations of the "other world." Time crammed with new sensations stretches itself and its dimension grows. Or, in other cases, the intensity of new sensations supplies diversity.

The second element is the standstill of time, which prevails, as in the case with the Castle of the Sleeping Beauty; in other cases it is mixed with the idea of extension.

Thus the formula of religious ecstasy is as follows: *The hero, the saint wrapped in the Glory of Holiness lost the sense of time. The stretching of time appears afterwards as the outer effect of this break.*

Nevertheless in some cases as in the case of the shaman returning home, the other world has his own time, simple and uniform, but differing from our own time.

We come in this way to another formula of the modern physics referring to time. There exists no absolute time. Each of the two systems, S and s , moving on one by the other has in fact a time

of its own, which is perceived and measured by an observer moving on within the same system. There can be no conception of simultaneity in the general sense of the word.

In connection with this the primitive mind does not feel inclined to lay a special stress on the relative quality of the time, either in contraction or in extension of the same. One may rather say that the idea of time for the most part is wholly rejected, put beyond consideration even in forming a chain of shamanistic perceptions of the world.

One must go further and assert the following: *With the refutation of simultaneity, the correspondence, the coincidence of the phenomena of being, existing in various and independent worlds, though they be equally three-dimensional and perceivable by the outer senses, still may be perceived without the category of time.*

To make this more lucid, I will introduce the first instance of such external coincidence of time from a literary source, namely from one of H. G. Wells' stories, *The Case with the Eyes of Mr. Davison*. A certain scientist of London, while working in his laboratory, gets struck by a spheroid lightning, entering through the chimney. He feels blinded, knocks against the walls, breaks glassware and at the same time he sees a sunny island, sea-gulls, waves and the turbulent ocean. His eyelight is transmitted on 180 degrees and gets to the antipodes in the south hemisphere. Since that time he sees together two visual worlds, which cover each other like two negatives on the same plate. These worlds are London and an island in the South Pacific. During the hours of daytime, from London morning till London evening, the older visual world is brighter than the new one, and the new is perceived as a shade of fog, or as the same negative only partly developed. But with evening the London world gradually fades and that of the South Pacific reasserts itself. About midnight the latter is in full glare and the London world in its turn fades into a shadow. Thus the stricken man in the night time is unable to walk alone and he is led by other persons. The double action of the eyesight produces all the time some results more or less unexpected. Thus, for instance, the man has descended into the lower part of London.

Immediately he sees that in the South Pacific horizon he is submerged under water and walks there as a new kind of diver. All of a sudden he meets a shark swimming straight ahead. He cuts it through as a visual hallucination and passes on. His suffering is only of an ocular character. All other faculties of his body and life remain as before in London. Further on, there comes another vision, a ship wrecked and submerged under water. The prow and the deck are strewn with corpses of sailors, half eaten by fish. The vision comes on in the same way as a full-sighted hallucination and wholly immaterial passes on.

Thus we have here two three-dimensional visual perceptions, complicated and well co-ordinated, which coexist in some unknown way, fully outside of time.

The time which is excluded here is the time necessary for passing from one visual combination to another. They are of course divided by an interval of space. But this space dividing them, one to be overcome in passing, belongs to the category of time. This is the fourth dimension of space, space turned to time and perceived as such.

Primitive conception abounds with quite similar ideas of coexistent forms of being, visual three-dimensional separately, but coinciding and covering each other in some unknown order outside of time.

For instance, the mice living on our human earth are ordinary animals. But somewhere, outside of our own world, there exists apart a special distinct region of mice. The mice live there in some other way, resembling earthly mice, but very similar to the human manner of living. They have houses, stores of food, instruments and utensils, perform ceremonials, offer sacrifices. An earthly shaman (Chukchi) comes to this region. An old woman is unwell. Her throat is ailing. But he can discern the reason of her suffering. She is an old woman, who in our earthly world has got into a noose plaited of grass and prepared by human children. Her cure may be effected in twofold manner. One may use the shamanistic power *there* in the mouse region and in the end the grass noose on the earth will burst asunder and the old woman of the mouse region will recover. Or more simply one may

tear off the noose here on the earth. The mouse will be freed and the old woman there will also recover. The shaman acts *there* and cures the old woman. The grass noose on the earth bursts in two. The mouse people pay the shaman with the best of their stores. They give him meat and tallow, a bight of thong, and several large skins. When brought to our own earth, these gifts, however, in conformance with the manner of being of our earthly mice, turn to dry boughs, to dead leaves, etc. We have seen gold given by fairies turn into dead leaves, etc., in a quite similar manner. Less frequent are the cases, where worthless things offered as a reward for human services turn into gold. "In some cases, moreover, Fairyland is represented as a kind of fourth-dimensional region interpenetrating our own. In other cases, Fairyland is a kind of Other World, situated somewhere underground or underwater, or on some islands far off in the sea."¹²

The "fourth dimensional region" of MacCulloch wholly corresponds to the main points of my analysis.

The mice and their whole collective way of living have two hypostases, two distinct forms quite separate from each other, but at the same time coexisting in continual connection. The same mouse exists here and exists there. It is double and separate, and nevertheless, it is the same thing, the same unit.

This shows how it is possible to assume the same thing or being as residing at the same time in two separate places "At the same time" is more strictly "outside of time."

Another instance. A certain man (Chukchi), bewitched by a shaman, rushes from his own house. He runs across the inner room, but it seems endless. He runs on, then looks around, the same endless walls. Then he utterly loses his head and rushes on. At last he leaps out and out of our own earthly world. Now he runs through the outer room of his house. It seems endless. The walls are endless. When he comes out of this room also, he proves withal to come out from the second upper world. Now he is on the other side of heaven, on the wavering ground of the clouds. He drowns there in the clouds and is near his ruin.

¹² I. A. MacCulloch, article on Fairy in Hastings' Encyclopedia.

This case presents a full analogy to the story by Wells mentioned above. An earthly house in two rooms connected together, is covered over with a connection of two worlds; and the bewitched man sees at the same time both perceptions of space covering each other and separate.

Still another instance. A young man in a certain Chukchi village feels unwell. His suffering increases from day to day. He sits in the inner room of his house, hanging his head down. His uncle takes the drum and starts on calling his spirits. "What is the matter with the boy?" he asks of one of them. The spirit answers, "Far away in the American land there lives an orphan girl in an iron house with no door at all. She is trying to get your boy for a husband for herself!" The uncle sends to America one of his assistant spirits, the small bird Perruper. The bird comes to the iron house and after awhile finds a narrow cleft, where to peep in. And it sees the two young people sitting together face to face. The wife is cutting cooked meat, and while the husband is eating, she looks into his eyes. It is the same young man as there at home, far away in Asia.

Along with such coincidence of complicated collective perceptions one finds coincidences more individual and also more numerous. The same being, human or animal, natural or supernatural, material or spiritual, is represented as having two or several forms, separate and coinciding. The being, however, does not assume these forms in turn, at first one, then another. It possesses all of them simultaneously. The forms are like the right side and the under side of the same cloth, like the face and the reverse of the same superficies.

Men are animals, and animals are men. The Trumai on the Xingu Plateau in Middle Brazil, live by fishing. For their Bakairi neighbors the Trumai are simply water animals. They sleep on the bottom of the river, they feed on fish.¹³ The Borors according to the same author boast that they are red Aras (macaws). This conception is also collective, but it illuminates the following more individual cases.

¹³ Von den Steinen, *Unter den Natur-Völkern Central Brasiliens*, p. 30F.

The ermine is a young man, nimble and graceful in sleek white dress. He is a clever hunter, a brave warrior. With all that he does not cease to be an ermine.

The prince Volga of old Russian epics "shook himself" and "proved" to be a sturgeon, a stallion, a drone. Still he did not cease to be the same clever prince Volga.

Apollo wants to catch Daphne as in the well-known group of Canova. Daphne turns into a laurel-tree, simultaneously a tree and a maiden.

Graphic representations of the same idea abound among the primitive people. On a Chukchi sketch there is represented the Big Raven, Creator of the World. His body is human, his head a raven's head, his right arm is also human with a hand and fingers. On the left side he has a bird's wing. He is a human being and also a raven. Another sketch represents a series of beings doubly formed, twofold and also unique. A fish with human hands, an insect with a round human face and with a head-dress, a fox with a human head etc. are double and unique. On a third sketch the spirit of epilepsy is represented as having two faces, one human, another animal. They are placed quite close together to show that they are one. Small carved figurines of similar kind are met frequently. They are two-faced. One face is human, another animal. One face is animal, another is that of a bird. The faces are placed abreast, or one on top of the figure, another on its lower part.

Some of these cases show that the change of form coincides with the change in size. The same idea is expressed very strikingly in the following incantation, used by the Chukchi traveler when passing the night in the open and quite alone. Sleeping alone in the open is very unsafe because of the wandering spirits. But one must take a small stone, or, best of all, a stone amulet, kept for the purpose, and then one must say: "I am not here, I am within this stone. And this stone is a big cliff, just in the middle of the ocean. The sides of the cliff are steep and slippery. The spirit, who wants to ascend, will break his nails and then slide down into water."

Another formula of the same kind runs as follows: "I am not

sleeping at all here in the open. I have entered into the ear of one of my driving reindeer. The spirits who come do not know where to find me."

When trying to analyze the purport of these incantations, one must come to the conclusion that the man in question has at the same time two different forms of being. He is here, and he is also elsewhere. He denies his being in the former place, but this is only a trick in order to deceive the spirits. He wants them to miss his first real form and therefore insists on calling their attention to the second form, which is supernatural and unassailable.

In both instances the other form is at the same time supernatural and diminutive. It is to be noticed, that the change of form, the sudden passing from one form to another, from the known to the unknown, from the usual to the unusual, in short, from the natural to the supernatural, happens frequently on the withdrawal of objects or persons to a certain distance. A man speaks with a stranger met on the way, all the time assuming this stranger, or a group of strangers, to be human. At least they part, and the one or the other goes away. And at some distance it appears that this stranger or a whole group of strangers, are wolves or ravens, ermines or foxes. The animals run away with cries resembling a burst of laughter.

In a Yukaghir tale, well-known also among the Russians on the Kolyma river, we find a traveler or a party of travelers, who traveled by sea in a large skin boat from one unknown island to another. On one of the islands they met men who lived in earth houses. These men welcomed them and gave them meat for dinner. But after a while when the travelers left the island, at some distance they suddenly noticed that their benevolent hosts were not men at all but white foxes, and their houses were simple burrows.

In a Chukchi tale a certain woman, who is suddenly frightened, proves to be a female fox. She runs away yelping, fox-like: "ga, ga, ga!" Another woman in a sudden burst of passion turns into a she-bear. Her children, full of terror, run away and in their flight one turns into a duck, another into an ermine, a third into a little fox.

Just in the same way A. Skinner tells about the Lenape:¹⁴

The guardian spirit in many instances was said to show itself first in human form, and it was only when it turned loose, that its real shape (of an animal for instance) was noticed by the recipient of its blessing. Another instance from the same. An old man named Pokotohemun saw in his vision what seemed to be a man, who gave him his blessing. Then as it turned to go, the being cried: "Kwank, kwank, kwank." Then Pokotohemun noticed that it was really a duck and was colored half black and half white.

Still another person suddenly flew away in the form of a crow, crying: "Ha, he hat." A little farther on they said: "We will now leave you. Watch us as we go." They went to the coast a little way and then I saw them trotting. They were wolves and I had thought all the while that they were human beings.

The spirits of disease, driven away by the Yakut shaman, are also named before changing their size just while leaving or at a certain distance. The withdrawal of objects or spirits naturally causes them to be diminished. At the same time it makes them change their form. Both ideas are evidently akin.

It is well known that the subsequent evolution of animism brings at last the element of time. The coinciding, coexisting, though separate, forms of being develop to phases coming by turn and interchanging with each other, now one and then another. A passage in an old Russian folk-story includes the following incantation: " 'Grey horse, chestnut, magical bay horse, stand up to my call just as a leaf before a grass blade.' He entered into the ear of the horse and turned into a brave lad not to be told of in the best tale, not to be described with the most clever pen."

Of the other ideas of animism this magical formula has preserved only the entering of the hero into the horse's ear, which of course presupposes the sudden shrinking in size, or rather two different sizes and forms, separate and coexisting. Similar formulae were mentioned above. Still, the new form the hero assumes, in the course of his transformation, is evidently conceived as subsequent to the former, as coming after the hero's passing through the horse's ear.

With the further evolution one form becomes the chief essential mode of the being, another turns into the mask, the covering,

¹⁴ *Op. cit.*, 65

the masquerade dress, the place of habitation, the sheath, and even into a simple ornament. In various cases appears the one or the other phase of this evolution. In a Yukaghir tale the wolves cast away their wolf-like masks and appear as genuine human persons. In another series of tales a special spirit, anthropomorphic or zoomorphic, lives within a river, a mountain, a tree, or even within a human artifact and acts as a master and possessor of the said material object, a special genius loci of a mountain or a river. A tree-maiden is transformed into a dryad living within the tree, into a Russian "russalka" hidden within the hollow of the tree, or simply sitting on a bough of the same.

Isis, a former cow, later keeps the horns as a kind of a head-dress. Hera, also a cow, remains βούρ is "cow-eyed," and Athene the owl remains γλαυκώπ is "owl-eyed." Aphrodite, the dove, soars carried by doves, etc.

On the other hand the folklore of people with much higher culture abounds with episodes of the most primitive coexistence of separate forms of being. Thus in a Hindu tale of Saktivega, from a well-known collection, Katha's aritsagara, the princess Kanakarekha requests that her suitors visit the "Golden City." Saktivega after many adventures comes to a fabulous land. There he finds in a sumptuous chamber on a bed of gold something like a body covered by a sheet of fine cotton. After lifting up the sheets he beholds his love, the princess, lying on that bed in a senseless state. He explores other chambers and finds in each of them a similar spectacle, an apparently lifeless body of a lovely damsel extended on a splendid coach. Each of these damsels may live either on our human earth or in the fabulous Golden City. Each can be wed in either of her places of abode.

This episode closely resembles the episode of the Chukchi tale cited above.

These are the subsequent phases of the evolution, but the essential form is the coexistence of separate forms of the object, outside of time, felt as something continual, intermittent, and so leaving no place for the category of time.

IV

Such are the developed forms of the conception of time and space in the sphere of animism and primitive shamanism. They seem to depend on the essential questions of our way of conceiving the external objective world. We meet them as well in a very similar state in the various regions and branches of the mental and psychical life of modern humanity.

First of all is to be mentioned the region of dreams, so complicated, so extensive and strange. It is well known that in the primitive conception of the world dreams represent one of the principal sources of religious knowledge, or even of religious experience.

Man sees in his dreams spirits, monsters, deceased kin; he meets all of these under a series of most wonderful, unusual circumstances, he wanders by himself in remote places, then wakes up and sees himself in the former place. So it is wholly sound logic to infer that all dreams belong to another form of being, supernatural, external to our usual world. Dream-land is a distinct form of being that is assumed by man every night of his life. This form refers to our own human world just in the same extra-temporal way, as analyzed above. Men and monsters of the dream land, the deceased forefathers, and the dreaming man himself, are the inhabitants of that strange world. In some respects they are similar to earthly beings, in other respects they are distinct, but resembling them.

Dreams form the actual material, the basis, the principal source and the practical evidence for the scheme of animism.

As to the fact that the visions of dreams (and also of external trances) actually represent the chief source of our religious knowledge, there are a number of important and varied arguments.

The prophetic dreams, announcing God's will and various ways of their explanation, extend from the primitive age through the religions of antiquity into modern time. They entered into Christianity, and lived on beside it, through oral tradition and through the scriptorial oneiroscopy.

One must, however, admit that the importance of dreams as the source of religious knowledge greatly abates and gradually turns into a mere residue, a survival of the past. Not only have we ceased to explain prophetic dreams, we have simply ceased to dream the prophetic dreams at all.

Nevertheless, one must notice that the quality and the character of our dreams has not changed in the least and remains essentially the same. In whichever way or manner, physiological or psychological we explain the origin of visions of dreams, that strange world, just the same as before, represents in the present the other form of being, a kind of double life, which we live through, outside the connection of space and time with our own earthly world. Every night we actually lie on our bed and withal leave for another unknown and unintelligible world.

Our dreams are moreover far from being quite incoherent and contradictory. In analyzing the contents and the psychical nature of our dreams, we have to notice with some surprise that the nature of our dreams fully coincides with the conceptions of primitive men. And this coincidence is so great and striking that one could assert with some confidence: *Our dreams are more ancient than the other part of our psychical self. Our dreams are palaeolithic.*

Marie de Manaceine in her interesting work comes very near to the same idea, when she says: "These retrospective or atavistic dreams [of committing murders, barbarous or cruel deeds, etc.] plunge us into the long past periods of the general consciousness of the species."¹⁵

On the other hand, Wundt goes so far as to call the dream a "normal temporal insanity." With as much reason one could call insanity the primitive state of the human mind.

For the primitive man, dreams are as real as the usual life. Both ways of being are subject for him to the same law and cause-effect nexus of phenomena. For ourselves, on the other hand, dreamland appears as a survival, as some kind of a psychical anachronism.

¹⁵ Sleep, p. 320. The book was first published in Russian, but subsequently translated into English, French and German. I am quoting from the English translation.

First of all the principal traits, characteristic of the dreams, is their dramatic way of development. Man, when dreaming, acts dramatically. He dramatizes each fleeting idea or image of his and even every casual word.

Thus, according to Abraham,¹⁶ a certain lady wanted to express in her dream that a violin player of her acquaintance was *turm-hoch*, towering big, when compared with other musicians. So she dreamt a high tower, and she dreamt the musician as standing upon its top.

More than that, each accident of sleep, every influence coming from the outside and passing by, a clattering sound, a blowing wind, a sudden feeling of cold, are immediately transformed into a whole dramatical action, well combined and inwardly persuasive. Modern man, when dreaming, appears as an able dramatist, while in the waking state he generally lacks the ability, as every one may conclude from his own experience. "The dramatic power of a dunce in dreaming," says Maudsley, "exceeds that which is displayed by the most imaginative writer in his waking state." The primitive man, on the contrary, possesses this ability of a dramatist, just the same, whether dreaming or waking. His psychical life as well as the physical one is one unremittent acting. His way of thinking is fully dramatical. The primitive man appears on the whole as a born dramatist and a natural actor. Therewith among the others are connected the dramatic dances and ceremonials of primitive age, and the early origin of theatrical pageants and processions.

Still Heracleitos says, "To those who are awake there is one world in common, but of those who are asleep each is withdrawn into a private world of his own (as quoted by Plutarch, *De Superstit*, 3).

Alfred Maury mentions a case, in which some of his friends, while he slept, tried to strike a pair of ear-pincers against a pair of scissors. He dreamt immediately that he heard the alarm bell and saw himself in the surroundings of 1848.

An acquaintance of mine pressed down his own hand while sleeping so that it felt insensible, then laid it over his breast and

¹⁶ Karl Abraham, *Dream and Myth*, p. 84 (of Russian translation)

immediately had a dream about a dead man trying to weigh him down with his cold hand, from which dream the sleeper awoke all at once with a loud howl. This dreaming person had occasion to observe very closely the coincidence of his two modes of being, one inward and the other outward. This coincidence for him was fully outside of time.

Our way of perception of our every-night dreams is essentially outside of time. And the dreams are real for us, exactly so, as if we actually had occasion and power to visit some distant land, remaining meanwhile on the former spot. Our dreams are inwardly just as real for us, as they were for our palaeolithic ancestors.

On the other hand, dreams consist partly of the objects and persons of actual life, though these persons act differently from the waking life, and the objects change most suddenly. In this also the dreamland resembles the "other world" of folklore and mythology. To the formula given above about our dreams being palaeolithic one may add another formula: *Each of our dreams is a fairy tale suddenly revived and brought into action.*

As to the conception of space, dreams of modern men admit of spontaneous and sudden change of dimensions.

Small things appear as large, large as small. In this the modern dreams generally follow the rule established above. Things and persons that are active, strong, or terrible appear as big. The same, when passive, weak, or timid, appear as small. The same things appear as gigantic, and then all at once shrivel to mere nothingness. An Austrian physician named Brach, who was himself subject to hypnagogic (half-dream) hallucinations of general sensation and of touch, relates how, as he fell asleep, his body immediately would become indefinitely large and heavy, extending towards the stars, and then in a moment shrivel up to a point.

It seems almost as if the idea of space and dimension, even out of its astronomical or magical connections, and in its very beginning, arose as a conception of rapid, impetuous motion, passing by, coming from afar and going away into the void. Therefore it is perceived even now so frequently as something impetuous, growing and diminishing, passing in a trice the whole

scale of change, so swiftly indeed that we are able to perceive only two points of the scale, the apex and the bottom.

As to the conception of time, modern dreams wholly coincide with the general conception of the primitive.

First of all they display a similar disposition to stretch the dimension of time, and to extend internally a few seconds into a sensation of several hours or several days. A sudden knock or clatter produces a dream and the knock forms the final action of this dream, for instance transformed into the discharge of a gun. This unexpectedly inverted development of dreams may lead to the idea that time in the dream can flow backward. Most of the authors admit that a dream of this kind, though inwardly long and complicated, lasts outwardly only a short moment, the very same which passes between the various phases of the perception of sound in the dream.

I will mention Maury's well-known account:

I slept in my room, having my mother by my bedside. I dreamt of the time of the Terror. I was present at the scenes of murder and myself appear before the revolutionary tribunal. I saw Robespierre, Marat, Fougier-Tinville. I argued with them. Then I was tried and condemned to death. I was carried on in a prison cart to the place of the Revolution. I ascended the scaffold. The executioner tied me to the fatal plank. He moved it into its place. The knife descended. I felt my head to be severed from my trunk. Then I woke up in great anguish and felt upon my neck a curtain-rod of my bed hangings, which had detached itself and fallen down exactly upon my neck just like the knife of the Guillotine. This lasted just a moment and still in that moment I had to live through a long series of complicated events.¹⁷

Afterwards the very fullness of this description led me to some doubts, but as remarks H. Bergson, one may find similar descriptions in other works on dreams.¹⁸

It is possible to perceive directly the short duration of our most complicated dreams, namely, in the moment of awakening, when the last fragments of the dream pictures stand up for a trice, then instantly thaw and scatter, like so many clouds. Nevertheless I am not sure that the backward perception of time in the dream comes from the causes indicated by most of the authors.

¹⁷ A. Maury, *Le Sommeil et les rêves*, p. 101, French Edition.

¹⁸ H. Bergson, *Energie spirituelle*, p. 113.

Edmund Parish¹⁹ mentions a very interesting case of a modern clergyman who, while lying in bed heard a loud knocking and called out, "Come in!" whereupon there entered a gigantic shape—the figure of his host, fantastically altered and grown to huge proportions. The apparition vanished with a loud crash and directly afterwards the owner of the house himself came into the room, and asked what was the matter, he had heard such a crash.

We have here evidently a case of the inverted perception of time, as mentioned above. The dream was evoked by some loud noise which had been heard all over the house, blended with the host's knock at the door. The visual perception of the host himself was also an element of the dream, or rather the half-dream. The mental process of the dreamer interchanged the positions of the two loud sounds. And the figure of the entering host assumed supernatural, terrifying, i.e., gigantic proportions. The interchanging of the order of the sounds could not be produced by some inward interval in the perception of the same, since the louder knock having a priority ought to have been perceived first.

One may surmise that the sense of time in a dream is different from the same in waking. The very shortness of the dreams points in the same direction. Since human sleep lasts usually for hours, the whole of the dreams must have a corresponding objective duration. And though the dreams do not last through all hours of sleep, the objective duration of each dream could not be quite instantaneous. The shortness of the dream at the moment of awakening indicates simply two different senses of time, the inward and the outward.

Since our dreams are much more primitive than our waking consciousness, it is possible that the dream sense of time is also primitive and perhaps the orientation of time in the dream is not very definite. Indeed only the visual shapes are clearly outlined in the dreams. The perception of time is generally entangled, confused, skipping from moment to moment with indefinite intervals in between. The regular continual course of time is absent in dreams.

¹⁹ E. Parish, *Hallucinations and Illusions*, 93.

Similar perception of time is characteristic of children and of primitive people. They simply do not notice time, nor do they care about it. This explains, by the way, why the primitive conception of coexisting hypostases of being is always outside of time.

Furthermore the objects and figures in dreams show the primitive disposition to display two or several forms coexisting externally of time. Every one can remember several dreams in which a certain figure seemed for instance a man, then on more attentive inspection proved to be an animal, a bird, or *vice versa*. Or one may see oneself as walking in the street, and then all of a sudden, to notice that one is devoid of the nether clothes, or something of that sort.

Our dreams are mostly visual. At least our visual reminiscences of the dreams are more precise than any other. Still it is interesting to mention, that the dreams of the blind are compounded of the other sensations, the impressions of hearing, of touch, of muscular effort etc. For all that, the dreams of the blind do not lose the essential nature of the supernatural, of fairyland. Animals, especially dogs and birds, seem to the sightless to have human voices and to be gifted with speech.

A blind man, describing a dream in which his friend appeared to him, said: "Then I dreamt that he tried to frighten me and to make believe he was a ghost *by pushing me down sideways*." By some the ghost is heard only; it has a rough voice and its bones rattle; or it pursues the victim, humming and groaning as it runs.

Nevertheless the relativity of dimensions, without visual perception, is hardly able to manifest itself. In direct connection with this the whole host of monsters, ghosts, fairies, and other strange figures that people commonly dream of, are but very imperfectly represented in the dreams of the sightless.

Among other things, it would be very interesting to examine the oneiroscopic books, ancient and modern from the same point of view and to extract from the same all data referring to the conception of time and space. In connection with this primitive psychical character of our dreams, one may indicate an interesting

fact, viz., that the dreams of children are more sensible and coherent than the dreams of the adult. Dr. Sigmund Freud mentions the fact with some misapprehension of its real cause. He mentions a series of children's dreams, and each of these presents a continuation of the events of daily life in waking, mostly in somewhat improved, more agreeable state. Most interesting of all is perhaps the last of the dreams, in which a small girl, who generally wanted to be grown up, when sleeping at her aunt's in a large bed, saw herself in a dream so big, and bulky, that even the large bed proved too small for her body.²⁰

From our point of view the coherence of children's dreams is evidently closely connected with the more primitive character of their ideas and feelings in general. The dreams of primitive people, so far as we know them, are also more coherent than our own dreams. Spencer mentions a case of one Zulu, who saw in a dream his elder brother, who said to him: "I want meat. Slaughter a cow!" He refused under the plea of having none, and a long altercation ensued with much expense of eloquence from both sides, all in a dream. The dead brother thrashed the living one, but could get nothing. "When I awoke," adds the narrator, "I could feel pain in my sides."²¹

Sir Everard in turn relates the following incident. "One morning when it was important to me to get away from a camp on the Essequibo river, at which I had been detained for some days by the illness of some of my Indian companions, I found that one of the invalids, a young Macusi, though better in health, was so enraged against me that he refused to stir, for he declared that, with great want of consideration for his weak health, I had taken him out during the night and had made him haul the canoe up a series of difficult cataracts. Nothing could persuade him that this was but a dream, and it was some time before he was so far pacified as to throw himself sulkily into the bottom of the canoe . . . More than once the man declared in the morning that some absent man, whom they named, had come during the night,

²⁰ S. Freud, *Psychology of Dreams*, 1 (Russian edition).

²¹ Herbert Spencer, *Principles of Sociology*, p. 89, (Russian translation.)

and had beaten or otherwise maltreated them and they insisted upon much rubbing of the bruised parts of their bodies."²²

One of my Cossack followers on a journey in the far north, who certainly was of the same psychical culture as the surrounding Chukchi, one time risked filching a China cup left on the burial place of some Chukchi old woman by her relatives. The next night in a dream the old woman came to him "exactly as living," and begged of him, "Friend, O friend, return my little cup!" It was on a sleeping place forty miles off from the burial place. Still the Cossack in the morning went all the way back and returned the cup.

Both these dreams are quite coherent and their purport was clear to the men that had dreamt them.

The primitive character of our modern dreams gives an unexpected support to the idea of Karl Abraham Sigmund Freud and others as to the analogy of the dreams of an individual with the myths of the collective unit. The dreams are related to the myths in the same way as the individual psychology is related to the social psychology. Thus, for instance, the story of Bishop Hotton and the mice which came swarming to his tower and gnawed a way through the stone fully corresponds in character to an individual dream, and every one of us may dream exactly of similar incidents with a swarming mass of aggressive animals. The swarming mice of the story are similar to the swarming jackals of Flaubert mentioned above. They correspond, moreover, to the swarming imps, vermin, spiders, worms of alcoholic visions, as shall be expounded later on.

The aptitude of some hostile beings to make their way to a doomed person through all protective impediments, forms, by the way, one of the most usual forms of the persistent idea of danger as proper to the dreams.

Hallucinations, all kinds of visions, and hypnotical suggestion are similar to dreams, inasmuch as their psychology is essentially primitive.

An hallucination is, properly speaking, a kind of a dream when awake, and so it displays the same aptitude of supersensual

²² E. Im Thurn, *Among the Indians of Guiana*, 344-345

coincidence external of time. I will introduce an interesting case of an hallucination which represents an analogy wholly unexpected with the features of the animistic conception of the world. It is mentioned by E. Parish on the authority of Sir Henry Holland.²³

A certain lady saw the apparition of her sister and thought: "If this is really she, I ought to see her reflected image in the mirror." Holland does not explain whether the lady really saw in the mirror the reflection of her hallucination. But this reminds us of the general idea, proper to the animistic state of thinking, according to which spirits, dead persons, all kinds of supernatural beings, when they become visible to human eyes, still have no shadow at all and may not form a reflection in the water. On the other hand, the changelings, the transformed beings, when reflected in a mirror, reveal their genuine form. So in Japan, if a man wishes to know whether a fascinating *musume* is not in reality a fox who is luring him to disgrace or destruction, he should obtain her reflection in an old mirror, upon which her actual vulpine form will reappear.²⁴

Later on a similar idea was applied to witches and wizards. They also have no shadow. With this is connected another animistic idea, that the dead persons, gone to the other world may die there again, but this second death would be final without any chance of a second resurrection. The reason of this lies in that all such beings are merely doubles, second parts of a man. When the double is dead, nothing is left there to be resurrected.

We have in the case of Holland an interesting attempt to verify the authenticity of the vision by the physical laws of the reflection of the light. And we know that generally in less serious cases, the visions may be actually verified and even dispersed by the applying of other physical senses etc. So when seeing an illusionary man sitting in an armchair, one may try to sit down on the same armchair. At this the vision will vanish quite suddenly.

Parish mentions another case of a young man, who continually heard his thoughts uttered aloud. So he went into an open field

²³ Edmund Parish, *Hallucinations and Illusions*, London, 189, p. 256.

²⁴ W. G. Aston, *Japanese Magic, Folklore*, vol. XXIII, 1912, p. 184.

with no house or tree in the neighborhood. There was, however, a laborer ploughing at a great distance. When even here he heard his thoughts spoken quite loudly, he said to himself that they could not possibly be uttered by the voice of that distant ploughman, and so he became convinced that what he heard was an hallucination.

The ploughman in the case was necessary as an item for the physical comparison and the fixing of the distances.

In more serious cases of hallucination the vision adapts itself to all impressions of outer senses and so it assumes every quality of actual existence.

In the case with the armchair, when the man suffering more seriously will come to the armchair, the vision will stand up and withdraw, leaving the place free to be occupied.

As to the case with the shadow, one may suppose that in a primary state of optical hallucination the verifying by the mirror will really make clear that the vision has no shadow, nor any reflection in the mirror. In graver cases the reflection of the vision will appear in the mirror, and thus it will take part in the hallucination.

So after all we must assume that the spirit and dead persons, when having appeared to the primitive men, may have actually had no shadow at all nor any reflection in the mirror of the water.

Another interesting detail about the hallucinations well known indeed, for instance mentioned by Parish²⁵ as borrowed by him from Charcot, refers to the following: The commonest visual forms in premonitory sense—delusions of the "great hysteria" are black rats, cats, snakes and spiders, ants, shining stars, fiery spheres and so on. The visions do not remain motionless. Either they go diagonally across the patient's field of vision, or else they come from behind the patient, hasten past him, and disappear in the distance. In their color the black and the red play a leading part.

As to the black and the red color of the visual hallucinations, one may connect with it the division of the shamanistic force into black and red. Black shamanistic force is generally evil, red

²⁵ Parish, *op. cit.*, 35.

shamanistic force is benevolent. It seems, however, that this distinction of an ethnico-sociological kind, is based primarily on the visual distinctions of the colors of the shapes appearing to the primitive men. On various graphical representations of both kinds of shamanism as combined together, the benevolent kind is always colored as red, and the evil kind is colored as black.²⁶ Red shamanism is subsequently represented and called white. It seems that the eye of the primitive men in the daylight discerns above all the most energetic red color and only afterwards perceives the whole complicated specter of the white.

Probably in connection with this, black and red play an important part in the witchcraft. The devil appears clothed either in black or in red. Fairies are also clothed in red.

Amulets against hostile forces are also either black or red. Thus at Scatterry Island on the lower Shannon, Ireland, a red string round the neck protects a child against fairies, and a lamb against fairies and foxes.²⁷ In Essex, England, a skein of red silk put round the neck is good against bad teething of babies.

In the Congo a red bead is used by a shaman as a revealer of the cause of the patient's illness. In medieval Germany a black woolen thread with nine knots upon it was bound as a cure over the sprained limb, etc.

The black and the red of the Devil's appearance and clothing came not from the blackness of the night and the redness of the flame, as is usually supposed, but more probably from this primary impression of black and red colors as perceived by men.

The same animal shapes appear in alcoholic visions. Vermin, reptiles, etc., appear in great numbers. Such, for instance, as the rats, cats, snakes, monkeys, fill the visions of the delirium tremens. The patient stamps and scrapes with his foot on the ground, as though crushing an insect. Suddenly he claps his hand to his thigh in order to crush a huge black spider which is crawling up his leg.

In all these cases, however, the presence of large animals and

²⁶ Cf. Bogoras, *The Chukchi*, part II, Religion, p. 327, fig. 233.

²⁷ Th. J. Westropp, *A Folklore Survey of County Clare*, Folklore, Volume XXII, 1911, p. 53.

monsters was also established. Some of the scientists use special forms for these two kinds of visions, and mention the microzooscopic and macrozooscopic forms (visions of small animals and visions of large animals, respectively). They try to establish the statistics of the same.

"Macrozooscopic dreams appeared in 62 per cent of dreams belonging to the group of severe hysteria, and in 35 per cent of the group of the slight hysteria," says de Sanctis. "In the alcoholic cases I have studied I have found, on the other hand, that macrozooscopic dreams constantly prevailed. Such zooscopic visions in general occur, according to Liefmann, in 70 per cent of the alcoholic. Delasiouve observed them in a fifth of his cases, and Nacke in a third of his."²⁸

These statistics do not fully agree with each other.

Not less interesting is the condition of the double or multiple personality. Two or several psychical units coexist together, one of them acting for a while, the others asleep, but by no means dead, ready for action in their due time. Sometimes the difference is surprisingly deep as in one case, reported by Dufoy de Blois, in which a girl of twenty-four, a somnambulist from childhood, in one state was very short-sighted, and in the other state was able to see excellently without any glasses at all. This upon the whole corresponds to the shamanistic coexistence of two hypo-states of the same being, though here the two forms coexist lineally, i.e., in time, and only replace each other. Some records of special cases recall even in detail the magic transformations of the fairy tales.

This girl had no less than five personalities, including the normal. Then in an apparently normal state she would shake, turn a somersault, and enter a new and different mental state.²⁹

This "shaking" and "turning a somersault" as a bridge between two forms of existence, fully reminds us of the transformations of the prince Volga, as mentioned above.

The inevitable swarming rats appear in the visions produced by hashish. The physiologists try to find a special physiological

²⁸ DeSanctis, *I Sogni e il Sonno*, p. 184, cited from Manaccine.

²⁹ Brit. Med. Journal, February 1. 1896.

explanation for these visions, which should form the natural bridge between the sociologic-psychological and physiological methods in the investigation of the said phenomena.

We, however, must indicate the connection between these swarming vermin of the hallucinatory visions with small imps, small jackals etc. of the religious and animistic conceptions of humankind. Sieroszewski,³⁰ mentions the Yakut shaman Tiusput, who asserted that he could not bear having his hair long, as becomes a shaman. For in the long hair there used to breed some tiny imps *yor*, who vexed him exceedingly, and the only way to expel them was the cropping short of the hair.

This remarkable case presents a combination of both perceptions of the swarming vermin, the animistic and the psychiatric ones.

Along with the diminutive vermin, Parish mentions another series of cases, including gigantic figures. Drusus in one of his campaigns was turned back from crossing the Rhine by a gigantic form which appeared to him. Brutus on the eve of the battle at Philippi saw the vision of the murdered Julius Caesar in the shape of a giant who foretold him his future defeat.

The so-called "second sight" also represents a very characteristic way of putting together two combinations of visual images, fully external of time. The case from the tale by H. Wells is simply a case of second sight, more persistent and continual.

Hypnotical suggestion has also all essential qualities of the dream. The suggestion of this kind is merely an impression coming from without and acting upon the conscience just as well as a noise, a burst of wind acts upon the conscience of the sleeping and dreaming person. The difference lies in that the dream works up the impression in manifold and complicated ramifications, and the hypnotised conscience works up the received suggestion as it were in a simple and single line. The visions of the dream become objectified, and combine into a full living picture. The hypnotical suggestion keeps for the most part its primary elemental subjective character: I feel myself as a man, as my own self and anon I feel

³⁰ Sieroszewski, *The Yakut*, p. 625, in Russian.

myself as a small girl, as a monkey, a dog, etc. It is possible to add also an object, for instance, to suggest to the patient the presence of a lion which is ready to assault him, or to change for the patient water to wine, the raw turnip or potato to an apple or an orange. There is, however, no further way of development. The dramatical amplification of the suggested idea is almost wholly lacking. The dream is a drama, the hypnotical suggestion merely a monologue.

The consciousness of transformation, nevertheless, gives to the hypnotical suggestion a primitive animistic character, and since the patient feels himself to be something quite different and separate from his former self, so practically he passes from one form of being to another. Such transformation, however, has more perceptible elements of alternity and successiveness, i.e., elements of the perception of time. Coexistence of forms externally of time is not apparent. Thus upon the whole one might perhaps assert that the form of hypnotic suggestion, as something more or less artificial, is of later origin and nature than dreams. On the other hand the hypnotic suggestion is a more elementary unit, a single brick of the edifice as yet unconstructed, one of the colored threads of which dreams usually weave their gaudy and strange tissues.

The psychical experience of actors, poets, and novelists contain elements of similar transformation, less clear and apparent, but more ramified and complicated than hypnotic suggestion. The transformation in this case, moreover, is not lineal, but has a character of double, since the artist never loses consciousness of his former actual self.

In several cases the transformation of this kind is actual enough. Flaubert, when describing the self-poisoning of Madame Bovary, felt for three days in his mouth a distinct taste of arsenic. A good actress enters into her role, so completely, that at times she attains a full self-deception. This, notwithstanding neither the actress nor Flaubert loses for a moment consciousness of his or her actual self. This double consciousness represents an evident character of the coexistence of forms of being externally of time.

Apart from this nervous artistic psychology an ordinary man is also more or less capable of undergoing a similar transformation.

I will mention a very characteristic instance from "Cossacks" a tale by Leo Tolstoi.

He perceived quite clearly what the mosquitoes think and hum about: "Here, boys, here! Here is one to feed upon!" And he saw with lucidity that he was by no means a member of Russian gentry, with honorable fellowship in the society of Moscow, but simply a self-same mosquito or pheasant, or stag, as those who move now around him.

Moreover it is quite natural that children in accordance with the laws of their natural evolution live through an animism of their own, more fully and absorbingly, than do the grown people. A small girl playing with her doll dramatizes and acts her conception just as completely as does a shaman, who performs the formula of incantation with two small old women, as mentioned before. The dolls too are a direct inheritance of the animistic age. A shaman in performing his incantations often has to deal with similar dolls, performing upon them various symbolistic actions.

A small boy who plays a locomotive, a hunter with a rifle, a robber, or a ferocious lion, turns into each of these images much more completely than the very best actor and, superior to the actor the boy at the same time creates himself his images, continually weaves the canvas of his dramatical sensations and with all the brightness and vividness of these sensations, the hero never loses the double consciousness of life and play. The boy-locomotive is well aware that "the locomotive" is a mere fiction and the boy himself is the genuine thing.

The conception of external objects with the boy fully corresponds to that of a primitive man.

Thus in a tale by Pierre Mille a small boy has the name of Cobblestone for the reason that when he stumbles and falls down, hurting himself against the stones of the pavement he is comforted with a suggestion that the cobblestones are hurt also. And so as a threat to all these cobblestones he assumed for himself a name of Cobblestone, rather *COBBLESTONE*, chief and unique.

This boy is evidently a finished animist not less complete than any black Australian or Andamanese.

V

When passing from the analysis of the subjective conception of things to the analysis of the objective manifestation of the psychical culture, we find every time the same elements of the relative perception of space and time.

On the primitive drawings and engravings the size of the objects changes according to their mutual importance, activity and power. On the Egyptian and Assyrian wall pictures the king is always represented as much larger than all the other figures. Especially he is bigger than the foes he vanquishes. On the other hand, when encountering the God, the king is represented as smaller than the God. On Nahuatl drawings the vanquishing soldier is represented as bigger than the vanquished foe.

I mentioned before that the ideas of primitive man about the relative dimensions of men, shamans and spirits are also expressed graphically in the drawings of various peoples.

On children's drawings man as the chief object and point of interest is generally represented bigger than houses, trees, etc.

The language of gestures, in representing the size of the objects generally for greater expressiveness, either exaggerates or again minimizes the dimension to be indicated. *Thick-set* is indicated as broad as a cask, *high* as of gigantic height, *small* on the tip of a nail, *bearded* as if the beard extended to the waist, *shaggy* as if the hair were like a large wig, *long nosed* by a nose like a hatchet, etc.

On the other hand, when ascending from animism to higher forms of religion, we meet everywhere the same image of the relative dimensions of spirits and men, certainly transformed and assuming a new shape more or less conventionalized.

Thus the position of man versus God, Supreme Power, fluctuates between two extreme limits. On the one hand, man in the hands of God is as clay in the potter's hands. Men and all earthly human things are before God as mere dust, a pinch of dirt, the earth is a footstool under God's feet. (Cf. for instance Job, x, 15.)

Even in the religious ideas of later Rome we find the same conception though perhaps originated under Jewish influence.

Thus, according to Suetonius, Cassius Longinus, the proconsul of Asia, condemned by Caligula to death, dreamt a night before that he stood in heaven before the throne of Jupiter and that kicked by the toe of the Deity he was hurled down to the earth. In this role Jupiter appears gigantic and Cassius Longinus quite small. On the other hand, one cannot be quite sure, whether there was really meant the Jupiter of Heaven or perhaps the Emperor Caligula, who, along with the other Roman emperors, from Julius Caesar downward pretended to be on the earth incarnated by Jupiter himself. The emperors namely were *divi*, god-like. Their image with the attributes of Jupiter appeared on money, medals, etc.

This brings us to the opposite idea of the mutual relation of man to the deity. Man namely through self-assertion of force and will, or otherwise by means of self-denial, asceticism and ecstasy may ascend higher than God, higher than the whole universe. His will soars over the world. Every casual whim of his becomes a law imposed on the gods and nature.

Such are the hermits, ascets, Richi or Sanyasi in Hinduism. As to the stylization of the idea of coincidence external of time, one may introduce the following quotation. In the Hindu Story of the Couple of Parrots³¹ the hermit says to Jayasundari: "Because in a former life, in your birth as a parrot you took away the egg of your rival for sixteen *muhurtas* [a *muhurta* is a period of forty-eight minutes], therefore in this life you have been separated from your son for sixteen years."

Here appears a mutual correlativeness of two periods of time, which belong to two separate phases of being, but are nevertheless closely bound together and even as if projected one upon another.

Hindu calculation of time admits upon the whole a great capacity for stretching. Especially the Jains indulge in the enumeration of periods of time truly enormous and extravagant. Thus *Palya* is a period measured by the time in which a vast well one hundred yajan (about 500 km.) every way, filled with minute hairs so closely packed that a river might be hurried over them

³¹ Treasury of Stories, by C. H. Tawney, p. 53, London 1895.

without penetrating the interstices, could be emptied at the rate of one hair a century. A *Sagaropama* is one hundred million millions of *Palyas*, and a *Avasarpini* and an *Utsarpini* which make up together a Great Age, consist each of one hundred million millions of *Sagoras*. Now the last two periods forming together an age display a peculiar nature, namely, human bodies and human lives increase during the *Utsarpini* and diminish during the *Avasarpini*. We find here not only the relative change of dimensions of space and time, but we may infer also that the Hindu propensity for forming all these enormous periods and epochs comes from the same stimulation as their relativity.

Buddha is merely the last incarnation of the same idea, the synthesis of all the brahmanistic Richis. The Jewish Jahveh and the Indian Buddha each represent one of the most prominent personifications of these two opposite ideas mutually excluding each other. God Jahveh degrades man to dust. Buddha on the other hand grew up until he annihilated Gods and everything. Gods and Universe came to Nirvanna, to nonentity.

However, even the Jewish mythology and mysticism, when taken apart, also reflect the same antinomical conception, as in a saying of Hura ben Abium:³²

"The souls of the righteous are higher than every angel of heaven. A man, who has not sinned, is redoubtable for spirits and demons. A man who has sinned is fearful before spirits and demons.

"A sinless one stands up with a sword against a multitude of spirits. Against the sinner on the other hand the spirits stand up with a sword."

Christian trans-substantiation may be reduced to the idea of the coexistence of two distinct forms of being. The persistent assertion that bread and wine of the Eucharist constitute the flesh and the blood of the God, while flesh and blood are in themselves the living God, ascend directly to the primitive idea of the coexistence external of time as was expounded above.

³² W. Bacher, *Agade von Aramaer*, v. III, p. 276.

VI

Last of all and in connection with the aforesaid a few words may be added referring to the theory of the so-called "mana," the preanimistic unpersonal conception of religion, the *prélogique* of Levy-Bruhl.

The preanimistic conception does not include the sense of distinction between subject and object. Self and Universe are one. Or as an old Tungus shaman explained to me on one occasion: "My soul has a hundred arms, and those arms are so long that when extended they reach to all points of the Universe."

The same conception is expressed in the following lines from "John Damascene" of A. C. Tolstoi:

I bless you, woods, and mountains, and sea,
and the blue sky above.
Oh, if I could embrace you all
Blending all my soul with you.
Oh, if I could without any exception
All of you, friends, and brothers, and foes,
Enclose within my outstretched arms.

In this way preanimism may rise to pan-animism, even to pantheism.

In its primary stage the sentiment of "mana" represents an unpersonal all-enveloping feeling of life active and everlasting. "Mana" is eternal life. Death does not exist at all, especially natural death. Primitive man even on the stage of animism does not comply with the idea of natural death. His ever-acting nature does not admit the void. Death is murder, something unnatural and even new, unholy and unallowed. This murder is perpetrated by a foe visible or invisible, by means of physical arms or by supernatural witchcraft. And as an unholy action, death is to be retaliated upon. Many tribes attribute every case of death to the malevolence of hostile shamans and strive to find out and to retaliate on the pretended malefactor. Later on as the enactor of the death there is represented not only a shaman, but also the "Murdering Spirit," equal in his malevolence to aggressive black shamans of human origin. As the next incarnation and the synthesis of the murdering spirits appears Death itself, a form

physical and withal spiritual. The folklore of the whole world abounds with variations of a similar story, how a strong man (a shaman) succeeded in vanquishing Death and took him prisoner. He put Death into a bag, and hung the bag to be smoked over a fire. After that mankind ceased to die. In the end, however, Death contrives to escape. In most cases the shaman releases him of his own accord.

The treatment of this kind as applied to Death shows upon the whole that conception of death in the actual sense belongs to the posterior period and came to men only along with animism. The impersonal pre-animistic sentiment of life does not include the direct comprehension of death. It does include only some instinctive fear, such as exists among beasts, referring to darkness, to an invisible blow fallen from nowhere, from the void. Nevertheless, the impersonal "mana" includes a constant and real source of religious activity. From "mana" is born the "tabu," the religious prescription mostly of the negative kind. The purport of every tabu is almost always fully concrete and practical. And though the tabu has for itself no personal religious prescription and authority its binding force is the more imperious and irrevocable. "Not allowed," "sinful," and "no more of this." And even at present all the tabus, the superstitious prohibitions of any kind whatever, are essentially of the same impersonal character. The godlike will that manifests itself in the said prohibition is after all of little importance. It is not so important that God himself forbade this and that; but it is important that a thing is forbidden, and that is the end of it. It is quite possible to be atheistic and agnostic and withal full of superstition, and with no faith of God to have a strong faith in tabu.

This impersonal "mana" is an all-enveloping *matrix*, from which arise gradually the later religious shapes, the spirits.

The conception of mana may also be deduced in another way. Several peoples more or less primitive and truly animistic in their ideas of the universe have besides an idea of the Supreme Being, of the God Creator, who stands above the world. Christian missionaries used to consider this idea as a remnant of the ancient monotheism. Men of a scientific turn of mind, on the other hand,

used to contest the actual existence of these creeds or to ascribe them to the influence of the missionaries, but the data referring to the existence of these creeds are too numerous and reports of the travelers persistent.

The controversy continues till now, and some of the modern scientists try to find an explanation more or less natural, even though deductive. "As soon as man had the idea of making things he might conjecture as to a maker of things."³³

Professor I. N. Leuba following in his traces wants to find for the Supreme God "an independent and special source" and says likewise: "High Gods are essentially the Makers."³⁴

Others try another clue, the sociological one. "Why could not a chief of Gods be as natural as a chief of men?"³⁵ This kind of arguing seems to me too rectilinear and rationalistic. Religious ideas do not generate by way of argument either in the primitive state or even in the modern humanity. The difficulty lies in that primitive men do not care so much for the "chief of men" either, since their social organization is precarious and incomplete.

On more attentive investigation of this idea it appears, however, that the central superior deity displays some qualities greatly different from the Christian God or withal, from the Semitic Jahveh-Allah, so aggressive, restless and active.

The superior deity of the primitive people is a strange kind of being, passive and indolent, dwelling somewhere high above, very far from human life and from all earthly interest, in short it is a Deity, rather retired from his charge. Thus in the cosmogony of the Chukchi the Supreme Being is not called Creator, but more strictly "One who made (the things) to be created." Only the first impulse to creation belongs to the Supreme God. All the subsequent activity of creation, the producing of the things and putting them in order belongs to Another, to a second Creator, who is represented as a mediator between the Deity and Humankind, as the ancestor, teacher and culture hero of primitive humanity.

³³ Andrew Lang, *The Making of Religion*, Preface, p. xvi.

³⁴ *The Several Origins of the Ideas of Unseen, Personal Beings, Folklore*, vol. xxiii, 1912, p. 164.

³⁵ Skinner, *op. cit.*, 20.

The gradual development of the same idea leads to Prometheus of the Greek, and even to the middle member of the Christian Trinity.

The Superior Deity of the Yakut, *Urun-ayi-toyon*, "bright creating lord,"³⁶ after having sent a part of his children down to the earth ceased to take an interest in their posterior fate. He does not want to mix in human affairs and even does not approve at all when human people come to him with their cares and entreaties. One time he was told that a certain of his daughters ascended from the earth to beseech him for her brother, who had met with some calamity. He grew very angry and said among other things: "When I made them to descend onto the earth, I did not tell them, 'Come back again.' If they prosper, let them grow, and if they die, let them perish."

The Yakut Superior Being dwells in the seventh or ninth heaven, very far from the human earth.

With the Lenape in North America the Creator lives in the twelfth or highest heaven and it takes twelve shouts to reach his ear.³⁷ He has given to the lesser spirits the charge of the elements and the direction of the fate of humankind.

Likewise in Africa among the Bantu tribes the central god is of a non-interfering kind, and therefore a negligible quantity.

"He varies his name, *Anzambi*, *Nyam*, *Ukuku*, *Suka*, and *Nzam*. But a better investigation shows that *Nzam* of the Fans is practically identical with the *Suku* south of the Congo. They regard their god as the creator of men, plants, animals, and the earth, and they hold that having made them, he takes no further interest in the affair. But not so the crowd of the spirits with which the universe is peopled, they take only too much interest in human affairs and the Bantu wishes they would not and is perpetually saying so in his prayers, a large percentage whereof amounts to, "Go away, we do not want you."³⁸

The Bantu conception of the central God, according to the

³⁶ Troshchansky, *Evolution of the Black Faith among the Yakut*, p. 33, in Russian.

³⁷ Skinner, *op. cit.*, 19.

³⁸ Mary Kinsley, *Travels in West Africa*, pp. 442-3. Cited from the Article by Prof. J. H. Leube, in "Folklore," Vol. xviii, 1912, p. 163.

same author, is identical with that of the Yakut. "He is too lazy," say the people of the Anyambu tribe in Congo about God. "Bad person for business. He lets things go too much; he cares about himself only."

According to Colonel J. Shakspear, the Lusheis in Assam, like so many of the tribes of their neighborhood, believe that there is a divine Supreme Being who cares not now for mankind.

I lay peculiar stress on this retired character of the Supreme Being, on the shrinking of his part and interest in the world affairs, since "the most ancient time of the first creation" (Chukchi).

"As to the "crowd of the spirits" of lesser kind, I will speak of these below.

Another variation of the primitive idea of the Superior God, also widely known upon the earth, is a kind of dualism, in which Superior God represents the benevolent creative source and the second lesser deity the malevolent creative force.

The second force mostly encroaches on the work of the first and spoils it.

With the Chukchi for instance the Assistant Creator who in some very elaborated myths is represented as the force bringing order, arranges everything in the universe. He is the father and protector of men. In other myths, where he meets with the Superior Creator, he is represented in a quite opposite way, as an intruder and spoiler of things. We may see that both variations of the divided force of creation came indeed from the same source.

The version of the dualistic myth of the creation in which the White and the Black Gods try their force on the producing of the universe, and the Black One in the shape of a Plunger dives to the bottom of the sea and brings some clay in his beak, from which the White God creates dry earth etc., and the subsequent creation of men from the self-same clay, with all essential details is as well known among the Samoyed, Yakut and Tungus, as among the cultured races of Iran, or among the Pavlikian, Kathar, Bogumil Sectaries of Christianity.

The animistic spirits and most of them evil are represented as children, the host subordinates of the second Black God.

Where the dualism has not developed, the evil spirits collectively replace the Black God. They are independent and self-acting, but their influence is not diminished for that. They get on in the world without a chief either Black or White.

What is the primary source of these peculiar conceptions? For what reason is the Superior Deity Almighty and Benevolent, represented as retired, and whence have originated the posterior shapes, evil and malevolent? The conception of the Superior Deity must have sprung from some psychical source even more ancient and primitive than animism. This source is evidently nothing else than the impersonal *mana*. In the very first stage of the religious sentiment in the blending of the self with the universe, the microcosm with macrocosm, with full disavowal of death, the sentiment of *mana* must have been rather bright, buoyant, leading to the optimistic way of thinking and feeling.

The clearing of the whole in two parts, the detaching of the self from the universe, leads to the sense of the danger, of the human loneliness in the wide world and ultimately to the perception of death. So the individual spirits which are born from this process are evil and death-bringing. They arise on the periphery of the consciousness of the universe and arrange themselves as in a circle around mankind. The periphery of the universe is opposite and hostile to the self.

The older sense of the unity of universe strives to repel the hostile force. It gets condensed in the center and also personifies itself into a shape that is central and benevolent. Nevertheless, this shape in the animistic circle is felt as obsolete and so in a way as discharged of its previous importance. *Mana* was mighty, all-enveloping. The central Superior God is a power of the past. It is a part *per* the whole, a center *per* the circumference, according to the general law of substitution. In a similar way within the social circle the chief replaces the community and enjoys the most sacred and intimate of its ancient rights up to the *jus primae noctis*.

This evolution of the religious sentiment partakes of the character of the astronomical evolution.

Mana is like a spheroidal nebula; animistic shapes correspond to the developed circumference, Central God to central compression.

Dark instincts, which certainly are not excluded even in the impersonal conception of the world, may condense into another shape, the Black God, opposite to the chief Central God and let us say, eccentric.

This analysis of the impersonal conception of the universe fits together with the analysis of the subsequent conception of the mutual correlation of the subject with the object in religion. The first naturally precedes the second.

Moreover, in correspondence with the preceding analogy of the two conceptions of the universe, religious and psychico-mathematical, one may, departing from the impersonal religious conception, at least put the question, whether the psychico-mathematical conception of the Universe does not include a similar impersonal stage which precedes the precise perception of time and of space in their mutual correlative conception.

The conception of space and time was perceived (from the very beginning) as an impetuous rush, a violent motion, coming from afar and then going away. The origin of this conception was perhaps simply zoological and only later on became animistic and then astronomical.

The first conception of time might have belonged to some invertebrates, starfishes or the like, which swam freely in the space of water and so formed for each other a kind of free and independent system, S , S_1 , S_2 .

But even the perception of this motion contained both ideas, of space and of time, blended together in the impersonal form. Only later on they get separated and thus could assume a more precise orientation.

Thus a correlative conception of the dimension of space and of the interval of time is preceded by an impersonal sense of time and space as general elements.

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ANTHROPOLOGY, RACE, PSYCHOLOGY, AND CULTURE

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THE following paper contains two themes. The first is that recent objective psychology has definite suggestions which may throw light upon the psychological features of the race question. It is suggested that some considerations of the fundamental tenets of objective or organismic psychology will aid the anthropologist considerably in his attack upon this vexing problem that concerns him so vitally. The second theme concerns some reflections on the failure of anthropologists to occupy themselves with important intellectual circumstances prevailing in their own culture. In the attempt of anthropologists to deal with the psychological race factor we find that they sorely neglect the newer and (in the present writer's opinion) the most fruitful psychological conceptions which have a bearing upon their problems, and instead borrow from the traditional and orthodox thinking which howsoever authoritative and respectable is really of no service to them whatsoever.

Of all the instances in the domain of science in which particular adjoining disciplines can (and should) come to the coöperative assistance of each other, no better can be cited than that which signalizes the relation between anthropology and psychology. For here we have two sciences converging in some of their studies upon different aspects of the same set of phenomena, namely, human behavior. The domain of cultural anthropology not only borders very closely upon, but actually overlaps human psychology. Assuredly if any two borderline sciences can help each other we should find them doing so in the case mentioned.

And yet it is an unfortunate truth that this desirable situation is in no sense even approached, let alone realized. To speak of anthropology helping psychology is almost impossible. And mainly because psychologists are apparently oblivious to the fact that much of the data they require in order to clarify their

problems the anthropologist is able to furnish. Psychologists still remain content to foster their sole relationship with biology. On the other hand, anthropologists do solicit the aid of psychologists in the work of solving problems, but with remarkably little response from the latter.

We shall be concerned with one example only, but that an exceedingly important one in the field of cultural anthropology. It is the problem concerning the relation existing between the achievements of a cultural group and the inherent mental capacity or endowment of that group. In the form of a question the problem may be stated as follows. How much of the achievement or superior achievement of a group may be traced to the native mental endowment or superiority of (the members of) that group?

In effect this problem comes down to the inquiry concerning the contribution of a psychological racial factor to the development of a particular total culture, or particular cultural objects or situations. In how far do we find psychological racial factors influencing the development of particular arts, techniques, social organizations, inventions, literatures, etc., either considered as qualitative products, or objects varying quantitatively in comparative degree of value. Are cultures or features of cultures owing to different psychological capacities among the different human groups, making it possible for some to develop cultural elements not vouchsafed others of inferior mental endowments?¹ An exceedingly promising attack upon this problem is to inquire concerning the existence of such racial mental endowment.

Before proceeding to inquire into the problem of native mental endowment and its influence upon culture we may ask why it is that anthropologists have not been successful in their appeals to psychologists for coöperative aid in solving this and similar human problems. The answer is simple. When called upon to help in this situation the psychologist hands the anthropologist a battery of "mental" tests. Now the least destructive proposition one can

¹ This is, of course, part of the general inquiry as to the influences upon culture and its development, of biological, geographical, as well as psychological factors

make concerning "mental" tests is that the latter are obviously nothing more than stimuli to performances which are without the trace of a doubt products of cultural development. To apply such tests to the problem now in question is certainly transposing the proverbial cart and horse. And so anthropologists, although they may think that such tests represent the highest approach of psychology toward the goal of natural science, cannot expect much help from the psychologist in solving the problem of our present discussion.²

That the anthropologist can neither with nor without the aid of the psychologist solve the racial, mental problem is above all owing to the failure of both types of scientists adequately to appreciate the fundamental nature of psychological phenomena and their possible connection with cultural facts. In all seriousness we may question the assumption that there exists any native mentality or any native mental endowment at all. Are individuals gifted with varying types of mind independent of and preceding their contacts with surrounding objects and situations? Accordingly we immediately face the problem of considering what is the general nature of mentality. Only when we come to a satisfactory solution of this general problem can we hope for success in the further inquiry concerning the evidences that mentality is of racial nature, and different among the various human groups. If it should turn out that there is no such thing as mental endowment in the individual then we need not, of course, even ask the further question whether human groups have different kinds or degrees of it. Arriving at the solution of the nature of mentality both from the consideration of its actual character and from studies of its operation, we may also learn whether and how it differs in different persons, its origin, transmissibility, etc.

In practically every discussion of racial endowment or individual native endowment it is assumed wittingly or unwittingly that

² In this paper there is no place for a critical consideration of tests. Suffice it to say that the retreat of testers from the idea that tests test a native quality called intelligence to the idea that intelligence is what the tests test indicates the absolute dissociation of tests from this problem. Some anthropologists have in various public prints sufficiently indicated their appreciation of this point.

mentality or psychological phenomena are qualities, traits, or capacities which are manifested in, or correlated with actions.³ The most charitable statement to make is that writers consider the mentality-behavior relation to be similar to that of the biological structure and function relation; so that a particular quality of mind correlates with particular kinds of bodily movements and actions.

Now, if there is anything definitely known about psychological facts it is certain that this notion of psychological qualities is a wholly false conception. The writer submits that psychological phenomena are in no sense qualities or faculties of an organism but really concrete activities.

Mentality is a name and nothing but a name for a kind of action, a kind of action which consists of very specific and very precise interactions of psychological organisms (human and infra-human animals or beings) with the stimuli objects and circumstances around them. In detail we may say that these specific responses of the organism to objects consist of particular ways of acting conditioned by the stimulative functions of those objects. With these stimulative functions the organism endows the objects during the course of its prior individual and concrete contacts with such objects. The endowment of these objects with stimulative function so far as the organism is concerned is merely a process of acquiring specific reactions with respect to them and their qualities. At first, of course, this acquisition of responses on the part of the organism is conditioned directly by the natural properties of objects but later there is accumulative development of stimulative functions of objects in the life of the individual and in that of his group.

This cumulative development of stimulative functions in the individual may be illustrated by the increasing and developing significance (functioning) of a rifle which comes for the first time into the possession of a primitive man. With the successive

³ Anthropologists still persist in using the term faculty or faculties although even psychologists who use such conceptions without exception attach the name as redolent of something unscientific.

development of responses (holding, grasping, loading, aiming, shooting, taking pride in, valuing, etc., etc.) to such an object it takes on the function of arousing each of those reactions under specific conditions. The stimuli features and specific reactions are absolutely reciprocal phases of unique events. Now consider the stimuli functions of the rifle to increase under group auspices; for example, besides being a weapon, an ornament as well as a piece of personal property, it also becomes something to offer a member of a neighboring tribe in settlement of a dispute of some sort. Here the rifle takes on a stimulatory function or series of functions through the cumulative activities of a group (series of persons) rather than through the activities of a single individual.⁴

Mentality then is a historical process and product always developed in actual contact of psychological organisms with the objects surrounding them. What room is there then for supposing that there is innateness of mental characteristics or qualities presumed to be properties of particular races or ethnographic communities? All the more strengthened is the notion of this impossibility here when we realize that this objective organismic conception does not allow in any sense for the erroneous though hoary and traditional views concerning the correlations of the physical and mental, whether the latter is considered as an entity separate from but acting upon the body or as a function directly connected with the body. We repeat again that for this type of psychological viewpoint there is no mind-body problem whatsoever, and no division of any sort between mentality and body functions or between the psychological and biological, when the actions of a single organism are concerned.⁵

Human conduct as the materials of cultural phenomena, that is to say, as psychological factors⁶ in culture, must as in all other

⁴ Probably in every case the actual mechanism involves the action of some one individual (the one who thought of this particular use of a rifle) or a very few.

⁵ Observe that we do not welcome the idea of the existence of a body any more than that of a mind unless by body one means a cadaver.

⁶ We distinguish between psychological and statistical behavior. The writer differentiates between the psychological reactions of members of cultural groups (social psychological material) and actions as statistical or historically descriptive behavior (subject matter of anthropology).

situations be considered as comprising specific responses of persons to particular things having special stimulations functions. These stimulations functions are handed down from generation to generation in a group or transmitted by diffusion from group to group as institutions⁷ in perfectly definite manner on the basis of concrete human circumstances. If our hypothesis is correct we have considerable light here upon the influence of innate mental endowment upon culture and the products of cultural conduct. Native mentality does not exist and it cannot have any influence upon culture.

What we have especially to observe here is that mentality or psychological phenomena are to a very great extent dependent upon the stimulations objects in the groups in which individuals find themselves.⁸ In consequence it is to be observed that in reality the usual relations considered to exist between mentality and culture are reversed. Instead of a given culture depending upon the innate mental endowment of the members of that group we find that the mentality of that group depends upon the kind of objects they find in their group or take away from other groups. As to the existence of both given types of mentalities and cultures they must be traced back step by step to simpler and simpler types of each until we find their origins if possible in mutual interaction of simpler mentally acting individuals and in simpler objects and techniques which have evolved to their present condition.

Let us suggest another attack upon our problem. Let us inquire concerning the origin of the endowment conception. We suggest that to a considerable extent the notion of mental endowment is the offspring of the evolutionary doctrine which has had so great an influence both for good and evil upon human thought.

⁷ For conception of institutions see Kantor, *An Essay Toward an Institutional Conception of Social Psychology*, *American Journal of Sociology*, 1922, 27, 611-627, 758-779; *The Institutional Foundation of a Scientific Social Psychology*, *ibid.*, 1924, 29, 674-685; *What are the Data and Problems of Social Psychology*, *Journal of Philosophy* 1923, 20, 449-457.

⁸ An individual's mentality, of course, depends also upon his own contacts with things as well as the influence upon him of his group or the society in which he lives.

At least the perpetuation of the mental endowment doctrine has been aided by this intellectual heritage. Why, it has been thought, cannot mentality be passed down and segregated in species or varieties of organisms in exactly the same way as the morphological or biological characteristics?⁹ Obviously the holders of this viewpoint fail to consider the absolute difference between what is called the mentality of an individual or of a people and the biological characteristics of an organism.¹⁰ We suggest very strongly therefore that psychological facts being actions to specific stimulative functions of objects or events are therefore not qualities transmissible from individual to individual. If mentality is not an endowment in individuals clearly the latter can not have superior and inferior endowments and transmit them to their offspring. How much less then may we think of group endowments of superior or inferior mentalities.¹¹ Is it not true that such an idea leads to the belief in all sorts of psychic entities which have no existence in fact except as inventions to confound the thinking of scientists interested in human phenomena?

In view of the often expressed proposition that mentality is not inherited but only the biological structures correlated with it, our inquiry would be very incomplete were we to forego a more intimate consideration of the problem of the relationship between

⁹ Perhaps at the basis of this erroneous conception lies the confusion of the biological fact that human animals (species) are such as have reached an evolutionary stage of development at which they are psychological organisms, that is, can respond to psychological stimuli and build up psychological equipment, with the idea that they are born (as individuals) to be capable of specific activities and necessarily to perform or develop them,—otherwise and erroneously expressed, have or possess intelligence to develop cultural objects and circumstances.

¹⁰ It is a rather peculiar phenomenon to observe that the anthropologists who reject the biological conception of continuity as referring to culture because culture is not biological but social and human, still believe that mental traits as individual phenomena are transmitted and inherited just as anatomical qualities are. Surely these anthropologists fail to observe that individual psychological activity is just as much an historical situation and condition in the life of the organism or person as is

the culture in the form of behavior a historical development in the life of a group.

¹¹ Endowments in the members of particular groups of course. It is probably unnecessary to involve ourselves in the worthless conception of a group mind.

biological and psychological phenomena. Specifically put, our problem is this. Every action being the response of a given organism whose biological (morphological) organization is in part at least inheritable the question arises what effect its biological factors have upon its psychological conduct. As the situation stands one might ask whether through the features which we may consider as inheritable there are not influences on conduct such as to supply a basis for the belief in racial or mental endowment. We believe that the opinion concerning such a biological influence upon conduct is based upon a misconception which can be cleared up by considering the relation between biological and psychological factors in human behavior. Every psychological organism is an animal.¹² Therefore it is clear that whenever psychological action occurs we have animal action. Without the animal there can be no psychological behavior. Moreover, when the animal is broken or injured in any way all of the psychological action is thereby made defective or different.¹³ Furthermore the diseased condition of an animal, its alcoholic or febrile dissociation, its high or low energism, influence psychological action. But still we must insist that this means merely that action performed by the organism is conditioned by the type of biological animal it is. In detail, this means that a long animal will be able to cover a certain space more quickly than a short one with similar locomotor mechanisms. If the animal has hands it will be able to grasp when stimulated; if the animal has a pneumo-laryngeal-buccal, etc., arrangement of a given type it will be a sound-making animal. Similarly, the diseased organism will display behavior not shown by the non-diseased one. As biological action such activities as are based upon morphological structures and conditions may be called functions of the structures or of their normality. To a great extent, we might look upon such anatomical or biological characteristics as conditions contributing to the general character of the psychological phenomenon (response to stimulus) along

¹² We waive consideration of the problem whether plants are psychological beings.

¹³ For purposes of our argument we shall say that this refers to all the subtle psychological behavior as well as to gross movements. Even our most intimate thoughts are, or may be, conditioned by the loss of an arm, leg, or other organ.

with many other factors. For example, the contribution of my total length to the character of my tennis playing is an actual influence upon my tennis conduct. But it must be observed that this is a similar influence to and not a generically different influence from my financial condition which enables me to purchase a fine racket or play on a good court. In each case the biological factors operate and influence the behavior because they are parts of the acting¹⁴ organism and not because as biological factors they have a determining influence upon action. In the latter case one would have to consider the biological organism as distinct from the psychological organism instead of the two being the same thing.

When we think in terms of biological function as comprised in behavior we are, we believe, on the way to a description of facts; while in considering the two as separable and distinct an accurate description of what actually happens in human behavior is not readily achieved. In other words, when we consider the anatomical features of the organism which take place in an action (really the whole organism acting) as parts (actually indivisible of course and therefore only logical parts) of an act going on, then we can account for the specific variations of action because of the size, weight, and other biological factors of a person. On the other hand, to think of such anatomical features, whether definite organs or structures or hypothetical biological factors, as determiners of conduct, then our psychological facts must be misinterpreted.

Now, of course, even the necessity to consider the biological functions as integral factors *analyzable* out of a total psychological action is only found in very simple psychological conduct. Beyond the operation of the reflexes such mention of the animal or biological contributions of the organism's makeup in behavior is superfluous. When we come to any sort of distinctly human and social conduct the biological factors operating are negligible

¹⁴ This influence is of course in no sense to be minimized. Nor should we overlook the fact that the person's own biological make-up and functioning serve as stimuli for his own actions; e.g., organic inferiorities may stimulate us to develop paranoid ideas. This situation simulates that in which the person's own behavior stimulates other behavior.

in description, although absolutely present in the event. The whole matter may be illustrated by a linguistic example.

A man and a woman¹⁵ each are stimulated to perform a language reaction to some very specific type of stimulus. In describing minutely the reactions we may be obliged to mention pitch variations because of the varying lengths of the vocal cords, etc. On the other hand, the vocabulary used, the syntax employed, as well as the expressive content and other features of the response will be precisely alike. Now it is these latter factors that may be thought of as the distinctly psychological ones. Language responses as a whole may be studied from several different angles. We may speak of a psychological, a social or institutional, and a biological angle. Even great variation in the latter may have no effect upon a complex psychological and institutional or conventional action such as language. Language as a psychological function or action is simply not a function of biological structures. It is a complex historical fact of the interaction of an organism and its cultural and individual stimuli surroundings (persons and institutions). The same is true for all complex psychological facts. What validity can attach, then, to the idea that there exist specific biological structures which, found in the makeup of individuals of particular races, determine such races or groups to develop superior cultures?¹⁶

Where shall we look for specific anatomical bases whether hereditary or not for the foundation of determiners of politeness, intelligence, sentimentality, inventiveness, honesty, patriotism, musicianship, calculativeness, etc.? Now when we think of these names as the symbols for actual psychological action and not of social institutions we must think of them as class names concerning thousands upon thousands of specific actions each of

¹⁵ Our subjects we assume illustrate the point, a situation which while extremely likely is not inevitably the case. On the other hand, the speech of two men or two women may illustrate the point perfectly.

¹⁶ More embarrassing becomes the question when we leave generalizations and approach the specific anthropological facts concerning the superiority of even the most inferior people to the most superior in some respects. How work out in that case the biological bases for superior mentalities?

which we insist is a specified event coupled with exceedingly particularized stimulations. The discovery of specific biological determinations of such action is impossible, howsoever easy it may be to conceive of them or to speak glibly of them.

Most carefully must we guard here against the temptation to take some actual fact of a biological sort and transform it into an illegitimate process. Samples of such transformations one may quote in abundance. A few glaring illustrations will suffice. Consider what intellectual crimes have been committed in the name of the nervous system. To a most deplorable extent has the brain been made the magical seat or repository of forces making for all sorts of complex human conduct. Beyond a doubt the attempt to put into the nervous system determining powers for actions which are really owing to complex interactions of the person with various objects, is a cultural phenomenon¹⁷ and not a fact of critical scientific analysis. We might also ask how closely guarded are the frontiers of science when one discovers in that domain how easily transitions are made in genetics from the colors of mice and flowers and the sizes and shapes of peas to the variations in psychological reactions and the performance of cultural conduct. The anthropologist might well ask in what way transforming a biological fact into a psychological one or into a mystical power is different from endowing a bone with divinatory power.¹⁸

Referring back to a statement in a former paragraph concerning the basis of the doctrine of racial mental endowment in biological conceptions, we might suggest here that a valuable general propaedeutic for the understanding of the psychological race problem lies in the investigation of the fundamental differences between the conception of nature and nurture, and that of stimulation and response.¹⁹ It appears to the writer as extremely probable that a failure to observe this distinction is responsible

¹⁷ In effect a symptom of not having outgrown spiritualistic psychology which required a nervous system to make it plausible.

¹⁸ The reader may be referred to Professor Lowie's strictures upon the deplorable but vigorous urge toward invention in the domain of biology. *Psychology, Anthropology and Race*, *American Anthropologist*, 1923, 291-303.

¹⁹ Response includes immediate action as well as behavior equipment.

for much confusion of thought concerning racial mental endowment. We repeat with emphasis that in the study of psychological phenomena the data are not involved at all with problems of nature and nurture.²⁰ Psychological phenomena are not biological differences developed and operating in contact with environmental surroundings but rather specific actions to particular functions of specific objects and situations. In the one case we deal with morphological structures and their functioning as conditioned by surrounding circumstances. In the other we deal with ontogenetically historical actions (behavior equipment) conditioned in their present operation by present stimulatory conditions, and the previous development of individual or group stimulatory functions in objects.²¹ As we have seen, since every action is an act of a biological organism there are always biological factors isolable in psychological activity. In the most elementary situations (reflexes) the actions are determined to a considerable degree by the morphological character of the organism.

In more complex actions, on the other hand, the morphological character of the animal plays an exceedingly slight part in the total activity, although never may we forget that it is an animal that is acting. For, as we have seen, this very fact has a number of bearings upon the total situation. Furthermore, we may not by any means neglect the environing objects and things for it is these things that in the final analysis (through their historical interaction with the psychological organism) perform the stimulatory functions. Our suggestion is, however, that such a problem as that of the mental endowment of groups necessitates keeping responses distinct from qualities or biological functions of psycho-

²⁰ Allowing of course that a psychological being is an animal and that it represents whether human or infra-human, a certain point on the evolutionary scale.

²¹ Both the biological problem of nature and nurture, (organism and environment), and the psychological problem of reaction and stimulation may of course and perhaps should be conceived of as the interaction of the animal and its surroundings. "Every creature is a bundle of adaptations," as the biologists say. But to neglect in any measure the important and wide differences between the two situations means disaster to our thinking.

logical organisms, and stimuli from environment.²² To heed this distinction means that anthropologists would realize that not only is there no evidence for a mental racial factor but that it is not race as a biological fact that is involved at all but rather the psychological activities of particular groups. In other words, no organic basis for culture either as things, processes, ideas, beliefs, or as statistical or group conduct is discoverable, for such a basis is lacking even for complex individual psychological activities. It does not matter then for the solution of the racial endowment question whether we can get beyond the problem of the mixture of races or not²³ since our problem is not concerned with races but rather with the character of psychological activities in general.

In closing this part of our paper we might consider a few more possible foundations for the belief in native traits whether individual or communal. To begin with, many of our activities are so typical and deep-seated as to appear inevitable and intrinsic characteristics. To base our conception of mental endowment upon this foundation bespeaks a lack of critical observation. For are not some of our most deep-seated behavior traits without question definite individual acquisitions? To illustrate, what can be more natural and inevitable to us than our particular native speech and yet obviously this is a definite acquisitional mode of behavior? Similarly, the various numerous sex differences in conduct which are found in particular cultural communities are fundamental and divide off sharply men from women. There are few traits of action more distinctly individualized than the respective "logical" and "emotional," aggressive and clinging traits among many others of men and women. And yet these and all other analogous actions are definitely acquired in the lives of the persons concerned. The various cultural shifts in particular communities such as our own breaking down of the barriers between the sexes demonstrate this. It can only be a failure or

²² The importance of this latter point is clear to anthropologists who observe that there is a difference between the biological environment of a group and the functions of that environment as a cultural factor.

²³ Some anthropologists seem to think that the unscrambling of race mixtures is essential for the solution of the racial endowment problem.

neglect to observe the subtle and complex developments of reaction equipment that prevents us from seeing this.

Finally, we might consider the possible support that abnormal human conduct is presumed to afford the mental endowment doctrine. It is widely, although most unwarrantably held that human beings are divided off into the intrinsically normal and intrinsically abnormally minded. Briefly, it is maintained that human individuals inherit defective mentalities. Were this the case it would certainly create a valid presumption in favor of the mental endowment doctrine. But is this the situation? To a certain extent we have already considered the issues involved. Let us repeat. May we think that there is such a thing as mentality whether considered normal or abnormal, which exists and is transmissible *along* with the biological organism? As we have implied we find here the fork in the road leading either to a belief in all sorts of imaginary entities or to the sanity of observation and report. Again, is there any evidence that there are hereditary biological structures carrying with them the basis for feeble-mindedness, say, or other abnormalities? Are these abnormalities such specific types of action that they can be in any sense correlated with specific structures? We have only to add that there remain the actually observable facts that in the case of abnormal persons we have broken or injured organisms either incapable of interacting with surrounding objects as a preliminary to the development of reactional equipment or incapable of performing such actions after acquiring them.²⁴ Our suggestion is that in dealing with abnormal phenomena in this way we may discover the actual conditions constituting or bringing out the abnormality, whether they are to be found in the conditions surrounding the biological development of the organism (injury or modification of germ plasm, intra-uterine or extra-uterine environmental influences upon the developing organism, prenatal, conatal, or postnatal injuries), or in the psychological conditions surrounding

²⁴ Our statement refers of course to the unmistakable cases of abnormality (so called organic types), for example, imbecility, idiocy, or paresis. In other cases we have no problem beyond that of the failure to acquire reactions or the acquiring of wrong ones.

the personal and cultural development of psychological behavior equipment (deprivation of stimulatory opportunities, or a breaking up of the individual's various stimulus-response connections).

On the other hand we have many positive indications in the observation of abnormalities which instruct us concerning the acquisition of fundamental traits. Consider what a wealth of material we find in the single class of homosexuals. Here we observe traits of action that go deep in the lives of the individuals concerned. And yet the history of those traits may be definitely worked out with an extreme abundance of details in many instances. Similarly an adequate or careful study of paranoiacs, psychasthenics, schizophrenics, and others, makes very clear the historical and acquisitional character of intrinsic human behavior traits.

In the opinion of the present writer an exceedingly fruitful method for the investigation of human problems is made available to us through studies in social psychology and cultural anthropology. Because in the investigation of human problems the indispensable impersonal atmosphere which arises from the ability to shove aside our own interests and our own predilections is so difficult to attain, and because without such a freedom of inquiry no progress can be made, we find it expedient to add to the method of direct observation the method of inquiring into the origin and validity of our conceptual tools. Not that this necessity is entirely absent when investigating the facts of the so-called natural sciences. But in the latter case, perhaps because of the comparatively simpler character of the phenomena dealt with, the situation has traditionally been less difficult. Furthermore, because human phenomena lend themselves to a variety of comparisons the value of social psychological and cultural anthropological studies is indubitably indicated.

And so with respect to the psychological racial endowment problem we are constrained to ask when cultural anthropologists will turn to a study of the ideological culture of their own group as an aid in its solution. All the more cogent is the question when we consider that until social psychology shall have made greater

strides the anthropologists are the only scholars who are at present equipped to carry on this sort of critical enterprise. As conditions are, however, we find that whereas in the study of the more primitive cultures the anthropologist may be thoroughly analytic and critical, when it comes to the study of the complex culture of his own group his critical powers fail him. This fact is in part owing to the circumstance that with respect to racial psychological endowment the anthropologist is insensitive to the temperature of his own intellectual bath, whereas in studying other sciences the contrast between his very different intellectual surroundings and that of the more simple peoples makes him very sensitive to the latter.

Specifically we should like to suggest that with respect to the problem of psychological racial endowment the assumptions involved are traceable directly to the domination of western (European) thought by animatistic cosmology rather than by observable phenomena. It is certainly plausible to connect the conception of mentality which underlies the doctrine of racial mental endowment with the general Oriento-Christian ideology of spirit and matter or spirit and flesh. Perhaps we may have to connect with other types of cultural tradition the intellectual attitudes which are characterized by the search for the nature of life in biology instead of the study of living things and their behavior, or force and matter in physics instead of the nature and action of inorganic objects, potentiality and determinants in genetics instead of combinations of specific interactions with stimuli objects and conditions. But in each case we are clearly dealing with powerful communal thought institutions and not with particular critical intellectual investigations of natural events.

Furthermore, the study of the cultural background of the racial endowment and similar doctrines has its practical issue in counteracting the influence of authority. Probably without exception the anthropologists who are interested in the race problem rely for their psychological material upon the staid and renowned authorities whose views, howsoever firmly intrenched, may be so only because they fit into a cultural ideology system

and not because they are based upon the sound foundations of observable evidence and valid scientific logic. It is of especial importance to notice that the matter of cultural tradition has more serious consequence for scientific interpretation than personal emotional bias or errors in individual judgment. Because it is impossible for a scientist to be an expert in every field or even in many fields it appears therefore that when he needs to borrow facts and conceptions from neighboring disciplines it is helpful to distinguish between cultural or traditional ideas and genuine scientific descriptions, or at least to keep in mind the possibility of such a distinction. Certainly in the case of our present problem, when the force of tradition outweighs so heavily the observation of fact, the attention given to cultural factors cannot be without value in the final results.

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THE PRIMITIVE COPPER INDUSTRY OF AMERICA

By GEORGE BRINTON PHILLIPS

THE account of the use of metal in pre-Columbian America as given by the old Spanish writers is meagre and vague, and it is only by an examination and analysis of the copper specimens found in our museums that we can obtain any accurate information. A copper age of primitive people was doubtless due to the proximity of native copper which was found in the soil as masses or nuggets, left by glacial action, or in the outcrop of native copper in the rocks. This substance, differing in its appearance and properties from the stone fragments chipped into shape, the roving Indian picked up and soon discovered that it could be flattened with a stone—a strange discovery.

Civilization, which with its flint knives and arrow heads had remained stagnant for thousands of years, now awoke after its long nap and the knowledge and use of this new substance which could be hammered into shape instead of being chipped, was the “Twilight of the Metal Industry” and later, when it was found fire would melt it, and the alloy bronze was discovered, it was the “Dawn of the Art of Metallurgy” with its unknown possibilities of Utility and Art.

The native mind was doubtless duly impressed with this new substance—copper—with its strange properties; and nuggets when found were fashioned into some shape and so greatly prized that they were placed by the Indian's side at his burial. It is from these old graves or burial mounds that many objects of a primitive copper industry in America have been obtained, which reveal at least to some extent the civilization of the pre-Columbian era. At the discovery of America, the aborigines were undoubtedly in the “Stone Age” and this use of copper was probably a sporadic industry of the Neolithic tribes in the United States who never seemed to have become familiar with the melting and casting of the metal as was practised in Mexico.

These Indian burial mounds were abundant in the United States and hundreds of them have been levelled by careful archaeological explorers and the objects obtained from them accurately tagged and described.

These records of civilization of the American Indian have greatly increased during recent years and the metal and other objects will be found in the Academy of Natural Sciences, Philadelphia, and the Museum of the University of Pennsylvania, The Peabody Museum of Cambridge, the Natural History Museum and the American Indian Collection of New York, the Smithsonian Museum at Washington and the Field Museum of Chicago, and a number of others. In addition to these extensive exhibits there are a number of private collections from local sites. An archaeologist of Wisconsin made a count some years ago of the copper implements collected in his own state in 1901, the number up to that date was thirty thousand, and since then has been yearly increased. It is believed many more such pre-Columbian specimens will be found as the forests are cleared and the land comes under cultivation. The number of copper objects in these various collections show that this primitive metal industry extended over a large territory now included in the States of Ohio, Wisconsin, Michigan, Minnesota, Arkansas, Indiana, Illinois, Alabama, Tennessee and Florida, besides some of the Eastern and Middle States.

In the museums will be found collections of copper objects from the different states, including:

Tools, weapons, implements, ornaments and ceremonial objects.

Tools, represented by chisels, axheads, adzes, gouges, spuds, knife blades, awls and drills.

Weapons, include spear and arrow heads and swords.

Implements, pikes, punches, spiles, needles, pins, fish hooks, bars and rods.

Ornaments, comprise head dresses, embossed plumes, breast plates, gorgets, crescents, pendants, ear plugs, bangles, beads, rings and buttons covered with copper.

Ceremonial objects, plates of hammered copper ornamented with figures or circles and bars, some perforated and embossed, others in repoussé.

The variety in types of some local implements suggest their employment for many years and may date back this primitive

industry centuries before the White Men arrived. This variation is especially found in the knife, the spear head and arrow point, the two latter are found bevelled, ridged, eyed, notched, toothed and barbed, sometimes with conical points, or flat and fitted for hafting.

A great deal of what is called "float copper" was carried by glacial action from the Michigan copper outcrop and deposited over the United States. The lines and grooves in the granite formation on the shores of Lake Superior show the glacial movement to have been from the Northeast to Southwest. Wisconsin lying in the line of movement received a generous supply of masses and nuggets of copper left in the soil when the glacier retreated, so that from Wisconsin have been obtained a great number of tools and implements as well as ornamental and ceremonial objects owing to the abundance of copper nuggets easily obtained, but where the supply was scarce its manufacture was more limited to ceremonial and objects of adornment. From mounds in Arkansas, Florida and Alabama some quite artistic objects have been found. A head plume of hammered copper representing a bird with conventional body and long wings and tail, from the Rose Mound, a burial in Arkansas, is shown in Pl. I. Gorgets, circular discs with the swastika emblem come from a burial mound in Alabama, Pl. I, and duck bill pendants with swastika cross from same locality. Pl. I. Reel shaped ceremonial objects of thin metal (apparently of no other practical use) from Alabama are shown in Pl. I; also a copper nugget hammered in a profile of an Indian from a pre-Columbian mound near Columbus, Ohio. A plate sheet copper about 10 ins. square ornamented with repoussé work in concentric circles and parallel bars and human profile was found in a mound in Florida. In some burial mounds skeletons were discovered with ear ornaments and bands on their heads and on the altars perforated plates, headdresses, pendants, gorgets and some adze blades. In one burial a plate of sheet copper was found covering a skull which it closely fitted. A mound in Florida yielded a breast plate of circular shape with an opening in the centre in which a precious stone had been placed. Adze blades and ear plugs of copper occur in burials with chipped

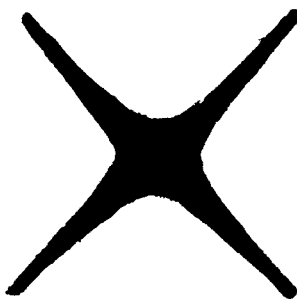
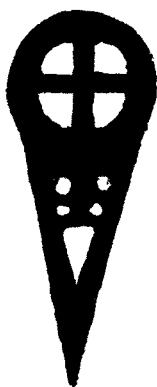
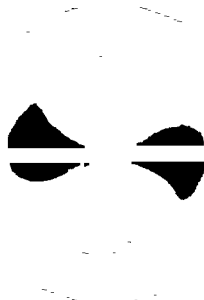


PLATE I

Upper left Ornamental Head Plume Sheet Copper Representing a Bird Burial. About fourteen inches long, three inches wide. Rosemound, Copper Co., Arkansas. Upper right Gorget of Sheet Copper Showing Swastika Cross, eight inches in diameter. Burial Mound, Alabama. Lower left Duck bill pendant of copper with Swastika Cross. About half-size. Burial Mound, Alabama. Lower right Reel shaped ceremonial object about six inches across, one-sixteenth inch thick. Hammered copper. Burial Mound, Alabama.

flints, shell beads, stone weapons, figurines in terra cotta and fragments of decorated pottery. Again other mounds have been opened and found to contain no metal implements of any kind suggesting a possible paleolithic age, but burials in which have been found brass rings, medals, metal kettles, sheet copper, glass beads and other articles of European manufacture are regarded as *post-Columbian* interments. When the white men began to arrive on our shores they brought with them many objects for trade with the Indians, usully metal articles of which the Red man was fond; and these prizes were buried with them. In opening a mound it is most important to note *everything* found in it, whether near the surface or deep down, and an analysis made of metal objects found so as to discover their origin and thus determine whether the burial was *before* intercourse with the whites or *afterwards*. A chemical analysis of the copper objects will decide if the metal is Lake Superior native copper so abundant in the United States; or copper of foreign origin reduced from impure ores. The American copper is remarkably pure assaying 99.90% fine with traces of Silver and Iron, whereas foreign copper rarely assayed 98% fine and always contained as impurities, nickel, cobalt, lead, arsenic, antimony, and sulphur in addition to small amounts of silver and iron. The following analysis made at the Bureau of Standards, Washington, D. C., given to the writer will indicate the difference in the composition and purity of Lake Superior Native Copper and that of foreign manufacture as shown below:

<i>Lake Superior Native Copper</i>			<i>Copper from European Sources</i>		
Lead . . .	nil . . .	0.0011%	Lead . . .	0.006 . . .	0.700%
Nickel . .	0.0010 . .	0.0108%	Nickel . .	0.061 . . .	0.467%
Silver . .	0.0570 . .	0.0710%	Silver . . .	0.021 . . .	0.100%
Iron . . .	0.0014 . .	0.0063%	Iron . . .	trace . . .	0.063%
Arsenic . .	0.0006 . .	0.0099%	Arsenic	0.002 . . .	0.640%
Antimony .	trace . . .	0.0000%	Antimony . .	0.008 . . .	0.095%
<hr/>			<hr/>		
Foreign metals	0.0991%		Foreign Metals	2.065	
Pure Copper	99.901		Pure Copper	97.935	
<hr/>			<hr/>		
100.000 %			100.000%		

The accurate analyses made by the government chemist at the Bureau of Standards, Washington, D. C., of large samples of metal, show the extraordinary fineness of the native copper from the Lake Superior region, with less than 1/10 of one per cent. of impurity while imported copper objects and European copper contained at least 2% of impurity, so that the analysis of a metal object from a mound will decide at once if it was obtained from the White man or was an Indian manufacture of pre-Columbian origin. A number of assays, have been made of copper implements obtained from mounds, Indian camps and ancient village sites, and the following given here made for the writer are characteristic of pre-Columbian specimens.

No. 1. Portion of a hafted leaf shaped copper spear head, $4\frac{1}{2}$ in. long, broken off at the hafted part. It was found at an ancient Indian village camp site in Waupaca Co., Wisconsin, and not associated with any object of *European* manufacture. The analysis yielded as follows:

Copper.....	99.69%
Silver.....	none detected
Iron.....	" "
Lead.....	" "
Arsenic.....	" "
Antimony.....	" "
Nickel	" "

Had the sample been *entirely* free from oxidation it would have assayed even a little higher of copper. No. 2. A spear or arrow head from an Indian burial site known as Muckwa village near New London, Wisconsin. It was broken off from the hafted end and was 45 mm. long, 15 mm. wide and 4 mm. thick, at the ridge on one side. It was covered with a thick scale of green and brown oxidation and showed the hammered marks of its manufacture.

It yielded as follows:

Copper	99.52
Iron	0.48
No other foreign metals present.	

No. 3. A copper awl 78 mm. long and 3 mm. thick about the middle part, tapering to a point at each end, and showed signs of

being hammered from a square shaped rod. The specimen showed some corrosion and oxidation or would have assayed a little higher per cent of copper.

Copper.... .99.35%

Iron0.65%

No other foreign metals present.

The hardening of these specimens was produced by hammering the copper and not by making the alloy bronze, with tin. In fact among the great number of these copper specimens of pre-Columbian origin there is no evidence that the copper was ever *melted* or that a bronze alloy was known to these American Aborigines. Sir John Evans says in his work on "Bronze Implements" speaking of the objects of native copper from Wisconsin: "A part of America would seem to have entered on the Copper Age long before it was first brought into contact with European civilization towards the middle of the 16th century." It is only within very recent years that the knowledge of how *extensive* this primitive copper industry was, has become known and fully recognized.

In summing up then the evidence of a pre-Columbian copper industry for the American aborigines, it is based on the widespread use of copper and variety of objects made of it as displayed in our Museum collections. This extensive manufacture of copper implements of similar shape to take the place of the stone and bone articles formerly used indicating a familiarity with the metal and an appreciation of its advantages would seem to justify the claim of a primitive copper culture for the American-Indians, suddenly interrupted by the arrival of the Spaniards and the knowledge of the greater advantages of the use of iron and the terribly destructive weapons made of it.

SONGS OF THE MENOMINI MEDICINE CEREMONY

By ALANSON SKINNER

IT IS hard to make clear to the layman the difficulty with which the sacred songs here presented, and the material embodied in the preceding paper on the origin, myths and rituals of the Menomini Medicine Ceremony,¹ were collected. A great change has crept over the pagan portion of the Menomini tribe in the years since the data for the first paper were gathered, and Mitä'win, then very much alive and virile, is now rapidly nearing extinction. Nevertheless, the downfall of the society has not been due to the influence of the peyote religion, which has claimed but few of its members, but to the great mortality among the older people who formerly led in all its activities, especially during the influenza epidemic of 1919-'20. There is no willingness to give up the secrets of the lodge displayed on the part of the dwindling number of survivors. It is still a highly esoteric society, but, through the personal friendship of the greatest of all the mitä'wuk then living, the adopted uncle of the writer, these songs and the myths and rituals were secured. They represent only a portion of the well-nigh inexhaustible store of knowledge of Mitä'win and other lore which the old man possessed. The songs here given are but selections from hundreds. Such as they are, they are, and probably will remain, the only Menomini Medicine Ceremony songs ever recorded, and stand as a monument to the intelligence and friendship of this fine old Indian, the late San Baptiste Perote, Judge of the U. S. Indian Court at Keshena, Wisconsin, who died happy in the knowledge that these things, once so important to his people, will not be lost. There still remains a wide field for an ethnobotanical study in connection with the lore of the Mitä'win.

INTRODUCTION—SECRET LANGUAGE

This collection of songs was obtained by the writer in June, 1919, on the Menomini Reservation near Keshena, Wisconsin, and was

¹ Skinner, Alanson, *Medicine Ceremony of the Menomini, Iowa, and Wahpeton Dakota, etc.*, Indian Notes and Monographs of the Museum of the American Indian, Heye Foundation, Vol. IV, 1920, 1-189.

recorded on a series of phonograph records since presented to the Gladys M. Skinner Memorial collection of the Museum of the American Indian, Heye Foundation. As here written, the songs occur in due order from the opening of the lodge on, and are divested of the priestly jumble of nonsense syllables added for euphony, and also to make them harder for non-members to comprehend.

In addition to this insertion of nonsense syllables to make the songs more difficult, the shamans belonging to the society also use inverted meanings—that is the true meaning of the songs often reverses what the words say. They employ also euphemisms and ceremonial titles for the objects to which they allude. For example, trees (*mêligwan*) are not called by their proper ordinary name, but *Mêligwopa'iwiniwâg*, or "Bowmen," since, it is said, bows are made of wood from trees. They also rejoice in the appellation, *Nimäsösatikânawâk*, "Our Grandfather Sticks." The bear, commonly called *äwä'sê*, (probably literally, "The Animal"), itself a euphemism for the common Algonkian term *makwa*, *mak'*, etc., becomes *Ko'skinawâo*, "The Scratcher," (as he climbs, understood). The snapping-turtle, ordinarily known as *Mikä'nâ* is hailed as *Okema'uwini*, of "Chief Man," or *Mi'shikâo*, "Hairy (Mossy) One." The Earth itself, ordinarily *akiâ*, is called "Our Grandmother," *Mitâwakâmik*, ("Medicine Land or Lodge"), and *Pâmakamike'sê*, ("This Little Land Along"). Roots and herbs are entitled *Wenaniku'akin*, "The Joyful Ones." Members of the Lodge are called "Those who follow the ways of Mä'näbus," and Mä'näbus himself is known as *Aia'pilâ-Mama'tcetau*, "Half Human," or, in modern parlance "Half Indian." I once heard a non-member, an Indian, suppose that a "half breed" had had much to do with the founding of the Lodge, because he heard this sobriquet so often used. Members of the Lodge are called frequently *Kakik'i'niniwâk*, or "Eternal Men," in allusion to the fact that they obtain immortality through its teachings. I am indebted to Professor Leonard Bloomfield, who is studying the Menomini language, for some of the above terms. Whereas the usual word for "holy," "sacred," "sanctified," or "mysterious," is *häwä'tâk*, in the lodge the term "blue" is often or always used with this

connotation. The consecrated tobacco is called "blue tobacco," the food dedicated to the feasters is "blue food," and the stone taken into the lodge building to symbolize the sweat bath formerly taken by the members is painted blue. Blue paint is placed on the candidate's face as a badge of membership. In addition to these schemes for making the rituals unintelligible to onlookers, many of the songs and formulae are sung in either what is said to be archaic Menomini, in Ojibwa, or Potawatomi, or at least in an imitation of these tongues.

It thus becomes plain that there is some reason for the supposition of some of the earlier writers, such as Charlevoix, who wrote in 1721, that the Menomini had a "private" language. The jargon of the Medicine Lodge members practically amounts to that—a combination of what corresponds to "hog latin," euphemisms, circumlocutions, archaic speech, inverted meaning, and bodily adoption of entire sentences, phrases, words, and songs from alien dialects of Algonkian, such as Ojibwa and Potawatomi. No wonder that outsiders of the same tribe cannot understand even the semi-public performances of the lodge.

The songs are given in full on the records, although it was not always feasible to give the rattle or drum accompaniments, and the phonograph records also sometimes lack the full complement of ceremonial repetitions, as each song should be sung from two to four times. The free translations given here were made under supervision of Judge Perrote by John V. Satterlee, ex-captain of Indian police at Keshena, and the writer, who has a small smattering of the priestly forms, as the meanings were often entirely obscured. The translations, moreover, are often not literal, but are given as explained by the informant. All the songs end in "*wchohohoho*," meaning "so be it," an equivalent to our "amen."

Each song has a title, but for some reason, perhaps a tabu, only a few of these names could be obtained.

For full data on the Medicine Dance, the reader may be referred to the writer's paper quoted above.

THE SONGS

1. Song in dedication of the candidate's presents (fees of admission) for the use of the lodge. The sacred ridge pole here mentioned has four segments, each of which has to be covered by blankets, robes, etc. given by the candidate before the lodge opens.

Sa'ya oko'tcikane

Ni'wino oko'tcikane

"We now hang up the goods for the fourth time."

2. Song heralding the opening of the lodge and the entrance of its members. At its conclusion, all the members have taken their respective places, including the candidate.

Nisa'ya yom wi'kiom pixtika'ia mitawi'komik

"It is now that we all enter the medicine wigwam."

3. Song dedicating the tobacco to the service of the members, to whom it is then distributed. The song is partly, if not all, in Ojibwa.

A'sa'mau sa'ya nawina'komik

"Tobacco now to please us."

4. This song, with the 5th, 6th, and 7th, comprises part of a group of four invocations to the gods, principally bird-like, the servants of *Matc Hawa'tuk* or the Great Spirit, Power, or Mystery, inhabiting the four tiers of Heaven. The first song invokes them by both their Ojibwa and Menomini names.

Nima'nituk, hawa'tukuk, ke'ne'aminum.

"(You) my gods, my gods, I am singing to you."

5. Kaka'kiu nita'tcimik

"Raven, I tell you to call the others."

6. Hawe'ni'sa'iya musa'kwa kina Ha'watukuk

"It must now be clear sky, you gods."

7. Nanau uske'wine'an itnata sakaua'mako uskewé' nean.

"In the heavenly void above now I am flying. At Suamico² I am flying."

8. The leader, or master of ceremonies, takes up the water drum, and transfers it to a group of assistants, four in number.

² *Sakaua mako* is one of the native names for Big Suamico, also called *Matc Suamako*, a sand dune point on Green Bay, Lake Michigan, associated with the early home of the Menomini tribe. The name is said to have been given by Ma'nabus.

who are called *Wê'nawûk*. These sit in pairs on either side of the lodge. It is they who prepare and administer the sacred drink to the candidate, and they are each entitled to a fee from the goods on the ridge pole. They are also called *Ose'hawûk*.

Aniwä'k'neu häwä'tûk nita'wan, kina Misa'komi'ko-
kiu³ (or ko'komin) hana

"I (too) am something of a god, you Misa'komi'kokiu,
little grandma."

Perhaps this is better translated "I (too) am a little bit powerful (supernaturally) oh Misa'komi'kokiu, my grandmother."

When the *wê'nawûk* receive the drum they rise and circle to the west door, dancing in a lively manner, and singing. As they sing they raise the drum in the air. When they have finished the pair on the opposite circle raises the drum and dances. The drum is then placed on the floor in the center of the lodge near the eastern end.

When this has been done, there is a pause, after which the master of ceremonies goes through a rite called *pisako'to*, or the shooting of the medicine shell. He opens the first shooting with a speech as follows:

"Now, you *wê'nawuk*, rise and stand. You are about to shoot each other with your sacred bags, thus carrying your magic power to one another through the *konä'pamik* or mystery shell."

This is a lively and loud chant, as is its companion, number 10.

9. Sa'potas kawawa'! Anisap'otas kawawa ní'na! Okwe'-
mau amisa'potas kawawa ní'na!

"I pass through them! I pass through them! I pass
through (even) the chief!"

10. Hano taiane! Pabo'kakanoketcinûk mana häwä'tûkuk.

"You gods, invisible beneath (the world) must also
take part.¹

Medicine Bag Songs. Owing to the difficulty of procuring blank records, it was found advisable to abandon the writer's original plan of taking all the songs of the Medicine Ceremony from be-

³ The earth personified. Grandmother to Mä'näbus, the lodge founder and guardian of all living things, especially plants, roots, and herbs used as medicines.

ginning to end, and attention was turned to those considered most important from the point of view of the master of ceremonies or presiding shaman. He at once suggested the noting of the songs pertaining to the medicine bags themselves, as he explained it, but which in reality refer to the supernatural power possessed by the animals whose skins are used as bags, which they grant to the Indians who possess these magic articles.

The almost forgotten division of the Menomini tribe into two phratries or moieties representing the Upper and Lower Worlds⁴ finds a parallel in the division of the members of the Mitä'win in similar groups according to the nature of the medicine bags which they possess. Those possessing bags belonging to the underworld sit on the north side of the dance house, those above on the south. So far as could be learned these groups have no special function, and no rule determining the admission of a member into one or the other could be elicited, unless, perhaps, in the case of a novice taking the place of a dead member he also takes over the medicine bag of his predecessor, which is revived for the purpose.

The two groups of Upper and Lower powers, as represented by the animal skin medicine bags of the members, are, in order of their importance, as follows:

1. *Lower World*

- | | | |
|----|---|---------------------|
| | { | otter |
| | { | mink |
| A. | { | weasel |
| | { | marten |
| | | |
| | { | bear |
| | { | panther |
| B. | { | wolf |
| | { | horned owl |
| | | |
| | { | rattlesnake |
| | { | prairie rattlesnake |
| C. | { | pine snake |
| | { | hognose snake |

2. *Upper World*

- | | | |
|----|---|---------------------|
| | { | raven |
| | { | duck hawk |
| A. | { | red shouldered hawk |
| | { | sparrow hawk |

And, I presume other birds of predatory species, especially eagles, etc. Probably the lower world is more prominently represented because it offended Mä'näbus.

⁴ See Skinner, Alanson, *Social Life and Medicine Bundles of the Menomini Indians*, Anthropological Papers of the American Museum of Natural History, Vol. XIII, p. 15.

To this list my informant added that the fox-squirrel belonged to the Upper World group, for no reason that could be gained, unless it is arboreal, and that the snapping-turtle, while rarely or never used in recent times by the Menomini to make a medicine bag, was a very important animal patron of the organization. The dog and fox were formerly used as associates with and relatives of the wolf, but their cunning and love of filth and carrion had caused them to be especially sought out by witches, and thus they had become tabu in the lodge. Fish also are too evil for the use of the *Mitá'win*. They are familiar with all the nooks and crannies of the underworld, and are used by witches and sorcerers as mediums for visiting their unhallowed spots.

Catskins can be used, as the modern domestic cat, the wild cat, and the lynx are all younger brothers to the panther, but both these felines have no songs or medicines of their own, all being derived from the panther. The beaver belongs to the otter group.

This aggregation of animals, all of whom have donated particular power to the founders of the society is strikingly reminiscent of the myth of the origin of the Seneca Iroquois Little Waters Society,⁵ where all the animals in the world combine to restore the Good Hunter to life and give him curative powers over disease.

The turkey is, like the owl, an evil bird, and is used by sorcerers, so is tabu in the *Mitá'win*. In later times witchcraft is said to have been performed sometimes right in the Medicine Lodge. In 1921 the writer obtained a wild turkey wing fan from Mrs. *Mätc Opwe'tau* (Big Bird) wife of the late chief *Naiätowa'-pomi*, who said that when the sorcerers who belonged to the Medicine Lodge were angry at any person, they could publicly kill him. This was done by making a tiny fire on the lodge floor. To this medicine was added, and the fumes were fanned towards the victim with the turkey wing. However far away he was, his death was certain. The particular turkey from which the wing

⁵ Parker, A. C. *Secret Medicine Societies of the Seneca-American Anthropologist*. Vol. II No. 2, April - June, 1909, p. 165. It might be added here that the following animal skins are used as medicine bags by the Menomini: Otter, mink, weasel, marten, fisher, beaver, fox, squirrel, bear (paw only), lynx (paw only), duckhawk, sparrowhawk, horned owl. I once saw a bag of domestic cat skin. The pine snake is also used.

was obtained was killed near Lake Winnebago, at Chilton, Wisconsin.

Each group of animals as a whole is called *we^zka'nûm* or "comrades," and has its individual set of four songs. Then each variety of medicine bag has four songs in honor of its animal prototype. These are sung at the time appointed for this exercise by the members of the lodge holding such bags. The songs are known as being among the most important in the whole ritual. Note that a number are all or in part in Ojibwa.

The Otter Songs. Otter was one of the most important of the society's founders. All otter bags must contain the *apisé'tcikun* or reviving medicine, and the seed called *megisé*, which are swallowed in a draught by the candidate when he is initiated.⁶ The first song for the "otter group" of the Lower World moiety is therefore concerned with the administering of this drink, and is entitled "What Otter Keeps" (i. e., that is important).

11. *What Otter Keeps.*

Nina aya'wean nita'kotcinam ayo'ta muski'kium ni
sa'ya yuspapotitcina'iyam. A iii, aiii! We hohohoho!
"I am preparing the thing that was hung (the *megisé*
seed which hung on its bush). And you that are
hung up are going to drop." i. e. it will settle in the
candidate's back between his shoulders.⁷

12. This song, entitled, "Otter himself," refers to the well-known habit of that animal of coming out to play and slide on high banks adjacent to the water.

Asakwu^x atúk spa^xpit.

"He comes out and plays."

13. The title of this song is, "I am going to name Otter," and it is supposed to be in Ojibwa.

N'ka^xtawe'nau mí'kik.

14. This otter song is called "Yom mita'wakeu" "This Medicine Land."

Aiyonäki'naman

"I am piling up the goods" (fees)

⁶ Skinner, Alanson, Medicine Ceremony of the Menomini Indians.

⁷ Ibid.

15. Another song in Ojibwa, entitled, "He is a quadruped," or "He has four legs."

Nina'nigosa sagaté'siwa'yu wäwe'aweto^x.

"I am afraid of him."

16. This is the most important of all the otter songs, and indeed, is one of the greatest songs in the ritual. Its title, like that of No. 12, is "Otter Himself," and its origin is as follows: When the convention of Powers Below and Above gathered to instruct Mä'näbus, the Otter, who afterwards got the hero to come to the meeting when all other means had failed, was forgotten. But, far from taking offense at this omission, he left his home in the middle of the ocean surrounding the world, and swam without a ripple to join the council, exclaiming: "Why didn't you send for me? I am the most important of all, and I please everyone."

This song was so important that my informant refused to sing it without using his rattle for accompaniment.

Nisa'ya pa'xpean nisä's matci'an taäsikimaka nina
kuta usnistomika'yan nä'tä'wina koke'u äsiki'an.

Weasel Songs. Weasel resembles otter in many ways, hence his songs are similar. He is supposed to burrow everywhere in earth or snow, searching for prey.

17. Sosa' nisa'ponkûn yom ake'u.

"He riddles this earth as he goes."

18. A song known as *Seko'* nika'mun or "Weasel's Song."

Usipi'pa'xpean nina wiä'biskinian inê nínahop.

"I who am white, I too perform."

19. *Mink Song.* This resembles certain otter songs. It is at least partly in Ojibwa.

Nina'nigosa nina sa'ki^u niko'nan.

"I am afraid, I, mink, am full of tricks."

20. Song for the snake group, called "The Four Comrades," (*Niu nawetan*).

Natawä'o, shishi'kw'äo, ina'winu maiwatau sinawä'-
tau ose'memau.

Rattlesnake, rattlesnake (another variety) he is leader,
sinawä'tau is his brother.

21. Song of the Bear bag owners. In Ojibwa. This song is called, "To the Bear."

Kitana'pomin nāsina'ki⁸ kwetone ne'o nikake'siton
n'gi ne'o.

"You see me, as I fix my body. I fix it usually about
my body, that it may become my own body."

This song probably has reference to the custom of the bear
sorcerers of donning entire skins and masquerading as bears.
They are supposed actually to change into these animals.

22. Also a bear song:

Wiayo'saiane simata'kiane, Wiayo'saiane osaweminoti,
Nisa'ya matci'an, äwä'sê mitä'ninim.

I now begin to walk. I am going to walk like a bear.
Mitaha'sa minika'ni asi'an inêpetcino'taian
That is the way that I walk to yonder village.

23. *Panther Songs.* Panther gave his medicines to Mä'näbus
with the other animals. His root chewed and sprayed over a sick
person has wonderful restorative powers. Yet the other Powers
thought he had no magic. This song, in two parts, refers to this.
It is in Ojibwa, and apparently was only partially intelligible even
to my informant.

Änämi'tûmunûn nike'u ake'k anä'semau
Ano'neu sa'ya inotä'win, apä'sikneu nitanawe'nimi-
kuk nitc mit'äwûg.

The mitä'wûg (members of the society), depend on me.

24. *Turtle's Song.* When Snapping-Turtle heard what the
other Powers had given Mä'näbus, he arose at the council, and
declared: "I, too, am of great importance. I am not one who is
ever found lying dead. My magic is great to prolong life. Hau,
Mä'näbus! I now join your Grandfathers Above and Below!
I give you my heart. Even if I am killed, and my vitals torn out
and thrown away, still my heart beats on for four days!"

The Turtle's song is rarely used in the ceremony, except near
the close of the initiation of a new member who is in feeble health,

⁸ In Menomini this word is *ninanikonau*.

⁹ See Skinner, Alanson, Medicine Ceremony of the Menomini Indians.

when it is introduced to strengthen him and encourage him by Turtle's implied promises of longevity. The song is in Ojibwa:

Wika'ke Mishikāo otāhe kawé'yo nia'we

"Comrades, Mishikao,¹⁰ to my heart, my own body."

It is said that when Mä'näbus had accepted the Mitä'win from the Gods as the price of his dead Wolf brother, he asked them what he could use to accompany the songs used in the ritual. Upon this, Rattlesnake volunteered to help him, saying, "I will give you my rattle." Mä'näbus of course took the snake's tail, but modern Indians are content to imitate it with the gourd.

The gods then began to talk among themselves and wonder how they would be able to know when the Indians were holding the Medicine Dance. It had been decided that the water-drum should be used to rouse them, but the loon further volunteered to be their special messenger. "I can fly into the heavens to tell the Gods Above, and, as I can dive and swim under water I am familiar with all the abodes of the Powers Below." He was accepted, and therefore the Indians today carve the distal ends of their crooked drum-sticks in the shape of a loon's head.

The writer believes that much of the symbolism of the lodge, such as the rattle representing the rattlesnake and the drumstick the loon, is of secondary origin, and has been added to the old rituals in the course of years.

25. *Painting the Candidate.* One of the first and most important acts on opening a ceremony of initiation, is to place the sacred blue paint on the candidate's face. The song accompanying this is known as *Wäseho'tcikûn*.

"I had my paint from our Grandfathers above, who gave it as a gift to Mä'nabus."

26. Song when the candidate is shot with the medicine shell for the fourth and last time, called *uspi'mutuû oske' mitä'o*, "shooting the young member."¹¹

nika'nina nintä'pinawau

Inä'niwa nintä'pinawau

mitä'mu nintä'pinawau

¹⁰ Name of a species of tortoise.

¹¹ See Skinner, Alanson, Medicine Ceremony of the Menomini Indians.

“My shot reaches a new comrade
 My shot reaches a new man
 My shot reaches a new woman.”

27. During a certain part of the ceremony, a sudatory (*peme-wûk*) was formerly erected¹² and the *wé'xawuk*, (or *ose'hauwûk*), and two others erected it for purification. A single large stone was heated and rolled in, water was poured on it, and the six participated in a sweat, during which four songs were sung. The principal one of these is here given.

Uske'pa'ka'owi'kiwam n'pi'tikammonatuwe'wiamina.
 This house being blue (sacred) I enter it.

28. The last song. This is sung when the goods given as fees are taken from the sacred ridge pole by the *we'xawûk*, and distributed. The members then leave the lodge.

Kina na'winin, kina mitäwinin'nian wäkä'nin.
 “You, medicine society members, I pass my hand over you. I thank you.”

Songs of the Jebai Noke. The *Jebai Noke* is the ceremony held one year after the death of a member of the Mitä'win in order to raise another person of the same age and sex to take the place of the deceased in the lodge and in the bereaved family.¹³ In this way the late Judge Perote was the ceremonial husband of Mrs. Naiätowa'pomi, since he had been raised in her husband's place. At this time *Na'xpatäo*, brother of Mä'n'äbus, who has charge of the spirit world, is besought to release the soul of the dead member for a single night, that it may return and animate the body of the newly adopted candidate. This person may already be a member of the lodge but the ceremony is not dispensed with on this account. This was actually the case on June 21-22, 1919, when Mrs. Robert Pämo'pämi, a member, was adopted to fill the place of Mrs. Peter Fish, deceased. A large part of this ceremony was witnessed by the writer. When Mrs. Pämo'pämi arrived she was led to the east door of the *mitäwi'komik* or Medicine Dance structure, and was admitted. On entering the master of ceremonies took her by the shoulders, and faced her to the west, marching

¹² Ibid.

¹³ Ibid.

her to the right to a place between the eastern and western doors on the right side, where she was seated and dressed in a complete new suit of clothes provided for her by the chief mourners, Mrs. Fish's husband and daughter. The master of ceremonies meanwhile circled back to his own place near the eastern door, and twice sang a "clothing song." He then proceeded to the western door where the song was again twice repeated. This Clothing Song is called *Aiom onā'nao nēnētapii'tikanûk*. ("This one to be clothed, I fetch him in.") The words are in Ojibwa, and it will be noted that, as often occurs, they have very little relation to the native title.

29. Wi'giwampi nigä'koni manito'wapi pitika'ian.

"The gods are now going into the house."

Judge Perote sang the same song also in Menomini, saying that either version was correct, the Ojibwa tongue being used as a compliment to that tribe, with whom many medicine secrets are exchanged. In the Menomini version there are two verses.

Wi'kiam yom nisa'ya ūspi'tika'ian.

"This lodge now I am entering."

Häwä'täkuk wiko'was 'spi'tika'ian

"The gods' house now I am going in."

After the clothing of Mrs. Pamopami she was feasted with choice viands. Before she ate them the master of ceremonies addressed her, assuming that she was actually the deceased Mrs. Fish, and exhorting her to take part. "Why should you refuse this feast? Join the other members, your former associates, both male and female, for the night. Remain with us until sunrise, then you will be dismissed, taking your gifts with you to the land of Na'patäo."

When this speech was finished, and the newly adopted member had eaten her special feast, the others also were dined. When this was over the master of ceremonies took the water drum and struck on it singing a song traditionally composed by Mä'näbus during the period of his sorrow for his lost brother.¹⁴ The words are in Ojibwa.

¹⁴ Ibid.

30. Nisa' sonämikonä'hamûn, mänäboshô'ha, nikan.
 "Marking out the way on foot to the Afterworld,
 Mänäboshô my comrade."

The words of the song refer to that part of the myth of the origin of the *Jebai Noke* where Mä'näbus refuses to accept his younger brother who has returned after having been dead for four days but sent him on to mark a trail to the land of the dead that human souls may find their way to the afterwards.¹⁵

Concluding the song the Master of Ceremonies turned to the novice and said, "I have sung this song to let you know that it is time to leave."

The candidate was now taken out of the lodge and faced to the west, and the spirit of Mrs. Fish that animated Mrs. Pämo'-pämi was dismissed to return to the other world with these words: "Now you have come to answer to the call of the mourners; you have been clothed and fed, and this fulfills the requirements of our religion, and ends our mourning for you. Now return to Na'xpatäo and be content with your gifts."

Miscellaneous Songs. The following songs seem best fitted to place after those to the groups of medicine bags in the regular ceremonies, but our informant considered them interchangeable and usable also in the *Jebai Noke*.

31. Song dedicated to all roots and herbs used medicinally, called *wenaniku'akin*, "The Joyful Ones" (Ojibwa).

Nitaninä hwa'ia nihawi ni sa'ya geziko omä ose'nau
 atanapea'na.

"It is now time that we begin to repeat about the roots,
 and herbs and this our grandmother (the earth)
 that lies about (us)."

32. A song called the "Naming the Medicine Roots." The words are very obscure, even to those well versed in the priestly forms and mysteries.

Inä'niwo iwa'kishim ntota'pinao akowí'na, mitä'mu
 kiwa'kishim ntota'pinao akowaní'na.

"When that man was sick, I took him up and gave him
 what is growing in the ground. When that woman

¹⁵ Ibid.

was sick, I raised her up and gave her what was growing in the ground."

33. A song in Potawatomi.

Nahikatä'o agweta'taiani haweshia niwiûpûituwa
ode'm mûske'ke'.

"I am now going to throw the medicine at you."

The Menomini alternate to the song is worded as follows:

Inê sa'ya uskatäo apa'kituanûn anu'm muski'kiwan.

Certain songs for dancing are merely repetitions of the same words and tunes used at other times for different purposes. These are called *P'sä'koto*, and some have already been referred to. One of these is a song in honor of the Underneath Panther god. It is called "Panther is Imitated."

34. Ona'maki" tuse' pise'u

"Underground Panther especially."

When this and the following song are sung, all the members dance and "shoot" one another with their medicine bags. The songs are sung first by one of the wé'nawûk, who repeats each dance, then crosses over and hands the water drum to his comrade opposite who goes through the same performance until all have sung. The last song of the medicine dance recorded is another Panther god song, which refers only to the tail of that animal.

Honane'wika

"Panther's tail."

SONGS OTHER THAN THOSE OF THE MEDICINE CEREMONY

A few records were taken on non-medicine songs, both those sung in the ordinary manner, and those the words of which are imitated on the flute. Only love songs fall in the latter class.

Love Songs.

36. Kutä's pina inê kewä'nom ní'nimosäo, kina kitia kita'-
pame kewä'nom ní'nimosäo!

"Now you had better go home, my sweetheart, for
your mother (at least) cherishes you."

The lover, having persuaded his sweetheart to leave her home for him, tires of her and sends her away with these words.

Another love song is as follows:

37. Pātc kunawehi'na nap'kina nishu'wishim ni'nimosäo.
 "Take good care of me, sweetheart, for I am somewhat drunk."

Gambling Songs. These are songs sung during the well known moccasin game. Several were obtained from Captain John V. Satterlee, and the rest from Judge Perote.

38. Mutce' makä'sin kinapa'kinûn.
 "Bad (or blank) moccasin you will always find."
 39. Mosa makä'sin kinapa'kwinûn
 "You'll always lift an empty shoe."

These songs are sung by the man who is concealing the button or bullet in the moccasins in order to confuse his opponents. When the leader of the other side thinks he has located the object he strikes at the moccasin where he thinks it is with a long stick. The hiding party all at once shout "*Klâ'sahân, hi! hi! hi! hi!*" "You lose!" or "You missed it!", or whatever the case may actually be.

40. Wawa'pikonotci he'tino 'kwäwa.
 "A mouse went courting a woman."
 41. Koko'koho ki'tcipikonä.
 "The Owl's big nose."

Presumably the last song is also in Ojibwa, or at least imitation Ojibwa. The next two songs refer to the method of scoring points in the game with sticks.

42. Niwätik nijepotunûn.
 "Four sticks I will stand up."
 43. Nisi kwu'nipewät hewa'tik.
 "With four sticks the game is ended."

Brave or Nānawē'tau Songs. These are warrior songs, now almost obsolete. Only one was gathered on this occasion. It is interrupted at intervals by whoops and outcries of applause.

44. Nānawē'tau nita'min nita'wä usnimiin meshi'k usho-
 ho'pian, inā'ni nita'win.
 "Warrior I am, therefore I dance and whoop! A man
 I am!"

There was formerly, and to some extent is still, a large mass

of war songs connected with the rituals of the war bundles, and other songs with hunting and luck bundles. These vary according to the dreams of the bundle owners, and are not fixed as to form or words, although following a certain general pattern.

ADDENDA ON MENOMINI CUSTOMS

The following collection of miscellaneous data on the Menomini consists of material jotted down at odd times in the writer's note book, and which has never before been published. Much of it is of considerable interest, and it is appended here for the benefit of the student of Central Algonkian customs.

Rules for Pregnant Women

1. She must not look at a mole, or the child will have little, deep-set, squinting eyes.
2. She must not eat the flesh of the red squirrel, or the child will be apt to bite other children as it gets old enough to play with them.
3. She must not eat bear meat, or the child will be fierce.
4. After the birth of the child, she may eat bear meat, but it must first be brought to her by a *skaupā'wis* or servant, who places a morsel of the meat on the point of a sharpened stick or skewer, and offers it ceremonially to her. She must refuse it the first three times, but may accept it on the fourth offering (four is the sacred number). After taking the first mouthful in this manner, she may eat the meat in the ordinary way. Thus is the evil temper of the bear warded from her child.
5. She must not eat the flesh of any variety of fish possessing teeth, unless she chews and swallows a little *nu⁺mi'pin* (beaver) root (*asarum canadense*) first. If this precaution is not taken, she will suffer disorders of the stomach. The underlying idea here is that some sympathetic connection between stomach ache and the tearing of the fishes' teeth. This is counteracted by the sympathetic magic of the beaver root, which has some legendary connection with the fish.
6. The father of the child must eat the flesh of all animals eaten by the wife, and at the same time, for if she eats alone, she will suffer during childbirth.

7. She must look at no "bad objects" such as snakes, or the child will be marked.

Rules for Prospective Fathers

1. The spirit of the unborn child is closely connected with its father, and indeed, is accustomed to accompany him, although invisibly, on his daily travels or hunts. As it is little and playful, it is apt to run on ahead, and frighten the game, especially the deer, as animals are able to see spirits that are invisible to us. It therefore behooves the father to carry a little toy or an article of child's clothing with him, so that the spirit of the unborn one will stay at his side, and he may have success.
2. As soon as the child is born, the father must make a speech to it, and to its mother, welcoming the former into the world, and making formal thanks to the woman, praising her, and telling her that her mind and body are now relieved.

Childbirth — Children

When the time arrives the woman is attended by a native midwife, or more rarely, a medicine-man who has special skill in the magic and medicine practice required. The woman kneels, and is held by the midwife, while another assistant watches to seize the child as it appears. The mother sometimes lies down and pulls on the midwife. She is required to shut her mouth and hold her breath and bear down, until the child begins to smother, and comes into the world itself to get breath. When it arrives, the midwife says, "A man (or a woman) has come to you."

In cases of difficulty the midwife makes the husband lie down beside her, lock arms with her, and pull, then the babe will surely come, but the husband must not look. If this fails, as a last resort, the midwife uses the swift (lizard) medicine. She first sings the *Oka'kinubikgosa* (swift-lizard) song, which gives the mother strength and frightens the child. She then administers the powdered flesh of the swift in a draught, the child sees what it thinks is a snake coming, and flees out of her body into the world. This is a very dangerous remedy, as the child in its terror may struggle and tear its mother. After bringing a child into the world

by means of the swift, the midwife must leave the place immediately. The child is washed shortly after birth.

Next comes the formal speech to the newborn child and its mother by the father, mentioned above. Next the navel-cord is taken and a piece of it is preserved in the house as a talisman for the child. It is not fastened to the cradle, or kept about the person, as among other Indian tribes, like some of the Ojibwa bands and the Sioux.

If the child is a boy, its penis is pinched as soon as it is born, to prevent it from becoming unduly passionate.

Sometimes, during the birth of the child, there is a medicine-man present who possesses a bundle of sacred charms that are believed to promote an easy delivery. He displays this, uses his remedies, and sings songs to please and encourage the mother. He also gives her instructions in these chants. Nowadays he tells her in these songs that she must stay in bed from 5 to 9 days. This, the Indians say, is knowledge gleaned from the whites.

As soon as a child is born, water is sprinkled on its face. The reason for this rite (called *shikaapunào uske'shikû*) is forgotten, but it is thought to have been a means of preventing ghosts from harming the little one. I suspect it is adapted from the Christian custom of baptism.

It is said that one of the benefits conferred by the gods on young girls undergoing their puberty fast is ease in childbirth. Women who are barren, or who desire a child to be born to them, take a common walking-stick insect (a species of *Diaperomera*) and allow it to crawl over their bodies, even placing it in the vulva and trying to hold it there for a time. This is sympathetic magic again, the insect being known to the Menomini as *metik nítcian*, or "wooden baby."

Sometimes the first expression used by the mother, midwife, or bystanders, at the birth becomes the temporary name of the child, as *Yâ-mitâ'mu*, lit. "Oh a woman."

Shortly after the birth of a child it is fastened upon a wooden cradle, called *te'ke'nagan*, consisting of a wooden back, oblong in shape, about 30 inches high, with a movable foot-board, and a bow in front from which a sunshade can be hung. The

baby is placed with its back to the board, which is fended by a pillow stuffed with the down of the cattail flag, or, as I have seen among the Ojibwa and Cree, with sphagnum moss, first spread in the sun and dried. Among the Menomini this custom of binding the baby to the flat cradle back—the binding is done with long bands of cloth, 4 or 5 feet in length by 8 inches broad, and ornamented with floral figures in beadwork, formerly strips of tanned deerskin with porcupine quill embroidery were used—is no doubt responsible for the flattening of the back of the skull so frequently observed in those brought up in the Indian way. This artificial deformation, which is wholly unintentional, though much admired by the Indians, is not to be confounded with the intentional head-shaping by pressure found among the ancient Choctaw and some other tribes, particularly those of the Northwest Pacific Coast. It is a widely spread peculiarity, being formerly found among all tribes using a cradleboard of the type found among the Central Algonkian, and was known in prehistoric times, as is evidenced by skeletal remains exhumed in many ancient native graveyards.

When the child is a boy, its penis is allowed to protrude between the wrappings, so that when it makes water the swaddlings are not wet. In the case of a girl the down or moss absorbs all moisture. For chafing, powdered roots, of species unidentified by the writer, are applied instead of our talcum.

For some time after the birth of the child, the exact period was forgotten by my informant, but we presume a month, the foot-board of the cradle (and sometimes the head-board) is notched every day of the babe's life. During this time, called *Kunawuntise'ō*, or extraordinary period, the mother must by no means cook, except for herself alone, and the remnants of her food may not be eaten by anyone. Her husband especially must avoid this lest he be defiled, and unable to kill game. If by accident the man becomes unclean, he must ceremonially fumigate himself with the smoke of cedar leaves and perhaps by taking an emetic, as is done in similar cases where a man has the misfortune to defile himself by contact with a woman undergoing her menses, or even by eating from a dish used by her.

Notching the cradleboard during the extraordinary period not only keeps track of the time, but protects the child from harm, soothes it, and prevents it from being "mean." Toys, suitable to its sex, bows and arrows for a male and wooden spoons for a female, for example, are suspended from the bow of the cradle to attract its attention, and above all to keep its soul from straying off.

Holes are always made in the soles of the baby's moccasins, for the Menomini, in common with many Woodland tribes, believe that the newborn babe is fresh from the land of spirits, and is therefore likely to be coaxed to return there (to die) by its friends in the other world. The journey to the Land of souls is a long and hard one, taking four days and nights on the trail to the Western heavens—the trail is the Milky Way, called *Je'bai mi'hikun*, or Spirit road—and if the holes are cut in the tiny moccasins, the baby will be obliged to tell the coaxing ghosts, "I cannot travel so far, my shoes are bad."

In traveling the careful mother daubs ashes on the baby's face to keep the baby's soul from lagging behind, or being blown away. If this happens, the soul will follow the baby's body home, but will be late, and the child will cry for it until it returns. The ashes are sometimes rubbed on the baby's foot to hold it down on earth.

Twins are regarded with especial favor, as a gift of the gods. They are said to be some old couple who died long ago and are now reborn. The parents must be careful to keep them dressed alike, they must also not have different toys or be given different medicines, lest one becomes jealous and return to the spirit World.

Some children are recognized at birth as old people reborn, they have deformities of some one who has passed away, or are marked for earrings. Others, it appears, are reincarnations of supernatural beings, thus boys may be Thunderbirds in human form, the Thunderer they represent having entered the mother's womb, in order that he might partake of earthly existence with mankind. Such a child will often cry and act peculiarly until a seer is called, he proceeds to take the matter up with the spirits, and in the course of a few nights reports that he has had a vision

in which he has visited, or has been visited by the thunderbirds, and has learned that the child is crying for its true name which it bore in its previous existence, and this name is then given it. Sometimes it is not ascertained until later in the child's life that it is an unusual being. This may come later when it is found that the little one likes to play in the rain when its relatives, the Thunderers, appear, or can prophesy the approach of rain and storms. Such a child has to be treated with especial care, and for it there is always made a miniature warclub or lacrosse racket, emblems of real and mimic warfare, to keep by it all its life, both as protective charms and as emblems of its origin. Such a boy is sure to be a great warrior and lacrosse player. In like manner girls are born who are reincarnations of the Sacred Sky Sisters. For such a girl a woman's shinney game set in full size or miniature is made, or a bowl and set of dice provided. Such marked children must give the lacrosse game or shinney or bowl and dice game periodically, probably at least annually, lest their supernatural patrons be offended, and sickness result. Thus it happens that a medicine man called in to help a patient may find that these rites have been neglected, and accordingly order the appropriate game played as a cure, a practice that seemed meaningless and absurd to the early missionaries, who had no conception of the underlying theory.

Days of the Week

Sunday	Ona'mahi-ge'zigût	Prayer day
Monday	Kisoni'onami-ge'zigût	Day after Prayer day
Tuesday	Nishokwû'nagût	Second day
Wednesday	Apatawê'nim—gezigut	Half the week
Thursday	Niwû'kwû'nagût	Fourth day
Friday	Misa'katawai—ge'zigût.	Fast day
Saturday	Mani-ge'zigut,	Mary's day

Killing of Bears

Before killing a bear, a hunter always apologized to the animal in former times. Now he at least clears his throat before shooting. When the animal is dead, he cuts out its tongue and brings it

home, where, without a word, he gives it to his wife, who instantly knows the import of his gift. She at once goes out, finds the carcass, brings it home, and dresses it. Sometimes, for great occasions, the whole bear is singed and eaten, and not flayed and butchered.

While the regular name of the bear is "Äwäse," he has numerous names by which he is called in order to avoid using this title. Among these are "Ko'skinawäo," Scratcher, (as he climbs), used in hunting bundle and other ceremonies. He is also known by the honorary title of "Okem'auwinini" or Chief Man.

Pigeon Roosts and Pigeons as Food

Pigeons were taken in quantities at the old time pigeon roosts, and were prepared for food in a variety of ways. Young pigeons, in the pin feather stage were particularly prized. The little birds or squabs were taken, plucked, parboiled, split, and hung by their necks in bunches to dry.

Squabs were also parboiled, plucked, drawn, and boiled for their oil, which was considered a great delicacy. It was especially liked with the ash cakes called a'pon. It was from an Algonkian synonym of this name from some Atlantic Coast tribe that the corn "pone" of the south derived its popular name.

Pigeon oil was kept in bladders, and in addition to its use with the ash cakes, was eaten with pumpkins and squashes, or mixed with wild honey. Pigeon gizzards were also prized. They were rolled in birch bark and kept. The squabs were obtained by felling the nesting trees.

An Ancient Burial Custom

Ernest Oshkosh, Äkwinime'sa, "Little-one-in-everybody's mouth," (i. e., much talked of, an old warriors title), informs me that he has heard the old people say that in former times, when anyone died in the dead of winter, he was doubled up, and buried in or under the fireplace inside the wigwam, and the lodge abandoned or destroyed.

Notes on a Medicine Root

This root is called Mä'tc Mama'tcetau or "Big Indian." (*Echinocystus Lobata*). Its shape roughly resembles that of a human body. For ailments the doctor prescribes powder scraped from that part of the root which seems to correspond with the afflicted part of the patient's body. The following song must be sung and tobacco placed with the root as it is being scraped.

Ha, nimä·so, Mätc Mama·tecetau Kita'pä·nininotum/
uskotä·o lnana·towe·hiyan/ Noinni'·ta wä sika·samonum.

Ha, grandfather. Eig Indian You I depend on, I am going to, to cure me Now, this is why, I sacrifice tobacco (to you).

Elm Bark Canoes

In making an elm-bark canoe, according to information gained by Dr. Barrett, a tree of proper size is felled, and a suitable length cut from it. The bark is then carefully split along one side and peeled off, the log being rolled from the bark. The bark is then turned so that the rough outside is downward. Two poles are then cut of the length that it is desired for the canoe. These are given the proper curvature for the bottom of the boat, and the bark is brought up around them in such a manner as to form the gunwale, bow, and stern. A binding of watap is then wound around the gunwale to strengthen it.

It now remains to make the bow and stern watertight. The root of the cattail flag is then taken, beaten into shreds, and dried. This is used to caulk the openings, as it readily swells when damp and makes the interstices tight. No pitch is used in making elm bark canoes. Traditionally the birchbark canoe was patterned after this craft, though being made in a stronger and more durable manner.

Menomini Traditions of the Sauk War

In the year 1832 a war party of Sauk attacked a Menomini village at the mouth of the Peshtigo River while the warriors were away. They succeeded in scalping about a dozen children alive, and the utmost efforts of the Menomini medicine-men could not

make even one recover because, as was learned through a prominent Wabano, the scalps were placed in Sauk war bundles where the medicine acted upon the victims, even at a distance.

During the raid two Sauk entered the wigwam of a large and active woman named *Apă'skûna*, (the name is an onomatopoe referring to the grating of a canoe as it lands). One seized a child there, the other seized the woman, who proved more than a match for him as she wrested his warclub from his hands and slew him with it. She then attacked and drove off the other warrior.

This woman lived to an advanced age and died at the South Branch settlement. She was noted as a *Nanawé'taukiu* or Warrior Woman, and was considered the bravest woman in the tribe.

The Menomini considered this raid of the Sauk as particularly cowardly, especially with the regard to the scalping of so many children alive and the murdering of others who were cut up and the fragments thrown along the shore. This and the murders at Prairie du Chien they declare decided them to throw their weight on the other side of the balance against Black Hawk and to join the whites.

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION
NEW YORK CITY

UNIQUE PREHISTORIC CARVINGS FROM NEAR VANCOUVER, B. C.

BY HARLAN I. SMITH

TWO prehistoric specimens, which I secured on September 16, 1922, for the Victoria Memorial Museum, Ottawa—the National Museum of Canada—seem to me to be unique. They are each made of a prong of an elk antler carved with an animal form, and are illustrated in Figs. 1 and 2, from drawings by O. E. Prud'homme. These two specimens were presented to the Museum by Mr. M. H. Whalen of Boundary Bay, Washington, and are entered under catalogue numbers XII-B-1504 and XII-B-1505. Mr. Whalen said they were found in digging in the road cut in the large and well-known shell-heap which extends along the western shore of Boundary Bay, from near where the high land of Point Roberts is washed by the sea in Washington, northward across the international boundary and well out on the low land bordering the bay on the British Columbia side. The road cut is on the Washington side of the line.

Mr. Ralph L. Roys of Vancouver kindly accompanied me in my work for a number of days, repeatedly motoring me not only to the Boundary Bay shell-heap but to other archaeological sites near Vancouver.

The heap is perhaps half a mile long and for a considerable distance reaches a height of over six feet. In the heap is a row of several very large and deep pits, parallel to the beach, apparently house sites.

As to the antiquity of these antler prongs, when Mr. Whalen first showed them to us they were covered with the black soil common to this shell-heap and to the others of the neighborhood. I have no doubt that they came from the heap. The age of the specimens is consequently probably as great as this shell-heap. It is not likely that they were more recently buried in the heap or are from a possible recent addition to the heap. The heap when I first saw it in 1898 was partly covered with forest trees, in fact

it still is. Many of these trees were of large size. There is a similar shell-heap on the edge of the high land overlooking the level delta land, about a mile to the northwestward. It is opposite the school house, on the main or only good road from Ladners to Point Roberts, about a mile north of the international boundary or where the road ascends from the low flat land to the highland. On stumps of trees on this nearby heap Mr. Roys and I counted over four hundred rings of annual growth. Although Indians have lived in the neighborhood within, say, three miles until the present time and have left more modern deposits, it is altogether likely that the part of the Boundary Bay heap from which these specimens came is also over four hundred years old. In addition to this it must have taken some time for the heap to form. I have seen heaps at some modern Indian villages growing very rapidly, and at other villages not growing perceptibly.

Human skulls of both the rare narrow type and the common type similar to those of the present Indians of the region have been found in this deposit as well as in the one at Eburne which is in the Lower Fraser valley. These objects may have been made by people of either type.

The antler prongs seem to have been considerably smoothed and made more tapering or conoid than they are in nature.

The carving on each specimen is rather faint and is slightly weathered away in places, so that it is best seen in cross light, first from one direction and then from another at right angles, but otherwise the carving is the same on the reverse as on the obverse.

The carving consists of shallow grooves, usually narrow, outlining the animal forms. The first, illustrated in Fig. 1, represents on each side of the prong an open mouth with protruding tongue, an eye with a long line running back from it, short lines, extending downward from both the eye and this line, and a long longitudinal line which with the corresponding line on the reverse forms a v-shaped figure pointing forward on the back. There are faint lines, apparently of another v-shaped figure inside this one. The little lines depending from the eye are three in number on each side of the object, and bend back in the middle like little forelegs. The lines depending from the long line back from the

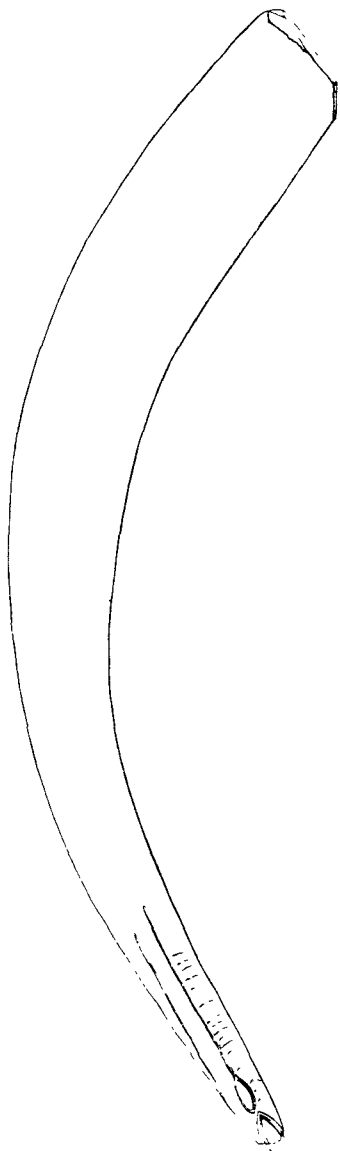


FIG. 1. Animal Figure Carved on a Prong of Elk Antler. From prehistoric shell-heap, Boundary Bay, Washington. Cat. No. XII-B-1505, in Victoria Memorial Museum, Ottawa. One-half actual size.

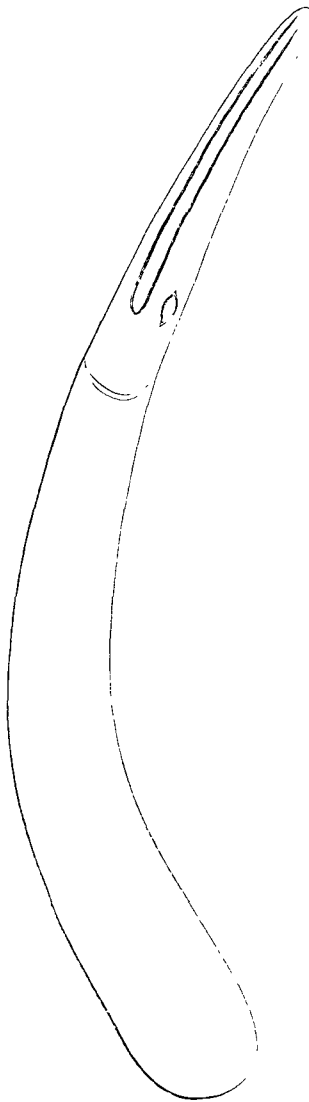


FIG. 2. Animal Figure Carved on a Prong of Elk Antler. From prehistoric shell-heap, Boundary Bay, Washington. Cat. No. XII-B-1504, in Victoria Memorial Museum, Ottawa. One-half actual size.

eye may have formed groups or a continuous hachure. On the reverse they are too indistinct to elucidate this point. The tip of the tongue is missing and shows a freshly broken surface as if it had been broken by being dropped or struck since it was found. The base of the prong appears as if it had been sliced off by a tool of the road builders, but at the edges shows that it was roughly whittled or hacked nearly if not entirely around with a narrow-edged tool or one with such a very rough edge as to leave narrow scars.

The second carving, illustrated in Fig. 2, represents an eye, the two edges of an open mouth, and the rear limit of the jaw or head. On the reverse, faint short lines extending up perpendicular to the upper edge of the mouth probably represent teeth. The corners of the mouth are excavated to a level with the bottom of the grooves. On the under side is an excavation narrow in front and wide at the rear, which represents the hollow space between the under side of the jaws. The base of this prong is irregularly rounded and smooth.

The use of these two objects is unknown, but Mr. Roys suggests that they may have been worn as a headdress after the fashion of buffalo horns.

VICTORIA MEMORIAL MUSEUM,
OTTAWA, CANADA.

BOOK REVIEWS

METHODS AND PRINCIPLES

Social Organization. By the late W. H. R. RIVERS, M.A., M.D., D.Sc., LL.D., F.R.S. Edited by W. J. PERRY, M.A. New York: Alfred A. Knopf, Inc., 1924. Octavo. XII, 226 pp. (Price \$3.50).

This posthumous work by Dr. Rivers will be particularly appreciated by ethnologists and sociologists as it sets forth the latest views which its eminent author had developed.

For the student the book has the advantage of covering in the compact compass of 172 pages the entire range of social organization. Three appendices, two by the author and one by the editor, deal with certain special features which will be referred to later.

A preface by Dr. G. Elliot Smith tells of the important work of Mr. Perry, the editor, in devoting

a vast amount of time and labour to the preparation of the manuscript for the Press. In fact, he has done so much that his name ought to appear as part-author; but he has preferred to give lucid expression and consistency to Dr. Rivers' views rather than obtrude his own opinions.

Mr. Perry's opinions on dual organization, however, are given untrammelled expression in the third appendix.

The scope of Dr. Rivers' book is well shown by the table of contents, which follows: I: Social Groupings. The Family. II: Social Groupings. Clan, Moiety and Tribe. III: Marriage. IV: Kinship and Relationship. V: Father-Right and Mother-Right. VI: Property. VII: Fraternities and Secret Societies. VIII: Occupation, Class and Caste. IX: Government. Appendix I: On the Origin of the Classificatory System of Relationships. Appendix II: Social Organization in Australia. Appendix III: The Dual Organization (by Mr. W. J. Perry). Appendix I is not new, but is a reprint of an article written in 1907 by Dr. Rivers and published in *Anthropological Essays presented to E. B. Tylor*.

As an example of the author's fairness in regard to many moot problems the reader will find his attitude as to the sequence of father-right and mother-right entirely free of dogma. He writes (page 99):

The situation is one for an open mind. We should wait further evidence and treat every region on its own merits, avoiding such generalizations as that of the universal priority of matrilineal institutions until intensive work in each area has shown us the nature of the process by which its social institutions have come to be what they are.

Again with regard to the origin of the "classificatory" system of relationship, we find that, although he stresses the importance of the dual organization, he admits other factors. He writes (page 77):

It depends upon kinship and sibship, upon the membership of a family and of a moiety or clan.

Dr. Rivers' open attitude with regard to the processes resulting in the institutions of present-day peoples is well summed up in the following sentence (page 97):

It was recognized, at any rate by many students, and the number is rapidly growing, that the existing institutions of mankind are not the result of a simple process of evolution, but that there has been in action a highly complicated process of blending and interaction of cultures, often widely different from one another, the outcome of the interaction being complex structures, not only containing elements derived from the blended cultures, but also new products of the interaction.

In some instances, however, it would seem that the author has gone out of his way to provide explanations of social phenomena. One such instance is that the reaching of agreement in the councils of unlettered peoples is due to the operation of a mysterious "gregarious instinct," which intuitively makes each member aware that agreement has been reached. This seems to the reviewer a dubious conclusion. The principle that unanimity is required for a joint action of the group, rather than mere majority rule, would seem to be the guiding factor. Undoubtedly public opinion is a powerful element in such matters. A single dissenter would well fear it, while on the other hand a "council" would hesitate to act because a mere majority favored a move, lest the ranks of the community be weakened by dissension and perhaps desertion of the dissenting minority.

Still again it seems doubtful if all human societies have passed through a communistic stage (page 170) such as Rivers would, at any rate provisionally, have his readers accept. Likewise of doubtful value is his statement,

that it is only the influence of the more enterprising members of another culture, endowed with qualities, material and mental, regarded as superior, which could change communistic and democratic societies with their powerful group-sentiment into individualistic and monarchical or aristocratically governed societies (page 171).

The bulk of Dr. Rivers' interpretations, however, will meet with the approval of most investigators of social organization.

Appendix III, The Dual Organization, is by the editor, Mr. W. J. Perry. Mr. Perry groups under this head (1) moieties such as those of the Miwok of California and of the Australian tribes, (2) divisions of society into chiefs and commoners, (3) geographic divisions, such as Upper and Lower Egypt, (4) divisions of villages into seaward and landward sections, (5) duality of ruling groups. Mr. Perry thus very much enlarges the scope of the term "dual organization," which usually is taken as applying only to the organization of groups of the Miwok and Australian type. Rivers so limits the use of the term himself (page 30). Mr. Perry's chapter is quite unconvincing. Upon a foundation of discrete dual phenomena, which he calls "dual organization," he has erected a vast phantom superstructure which spans the world.

Social Organization is a book which no student of institutions can do without. It is the last word of a most able student, one of the master minds of sociology. It is characterized by a charming lucidity, for which the reader will be grateful to both the author and the editor.

E. W. GIFFORD

Personality and Social Adjustment. ERNEST R. GROVES. New York: Longmans, Green and Co., 1923. VIII, 296 pp.

Professor Groves has drawn largely upon psychoanalytic and behavioristic psychology as the basis for this rather interesting book on the relation of personality to the social environment. At the outset he indicates that the day of narrow experimental study of sensations and perceptions has given way to a study of human instincts, emotions, and the habits built upon them. The study of individual differences by means of mental tests, moreover, is not sufficient to the understanding of the personality. Rather we must go on to investigate the emotional history of the child or adult and discover, if we can, the main lines of his personal growth. The mere static conception of intelligence levels is almost as incomplete as an interpretative principle of conduct as are the older structural concepts of sensation and perception themselves.

From this new basis, then, the writer turns to discuss at some length the rise of habits and behavior patterns out of impulses or instinctive trends. For the individual the matter is one of organization of his habits to fit into the social controls laid down by his group.

When the person is unable to fit into the schemes of reaction which we know in sociology as customs, folkways and mores, conflict is pretty certain to ensue. This is particularly true in a period like the present when these very social standards are themselves in a state of flux. Thus, we are forced to look into the whole problem of conflict, both on the social and on the individual side. The various trends of the child are, as a result of the divergence of standards, not always well synchronized and there result inner emotional disturbances. The work of Healy on delinquents has thrown great light on this matter and the present author draws extensively on Healy's material.

Certain fundamental emotional responses are given particular attention by the author. These are fear, anger, and sex. Considerable space is devoted to conflicts which involve these emotional trends. Illustrative material is drawn from primitive culture to show the tremendous place which fear plays in social controls in these ruder cultures. Professor Groves believes, moreover, that while modern machine-civilization has eliminated, in large part, the physical and climatological stimuli to fear that the complexity of present-day living, on the other hand, has raised the fear stimuli to more subtle and more attenuated, but nevertheless significant, forms. Anger, too, had a definite rôle in primitive conditions, but like fear has become altered and sublimated into higher formulations in the case of well-developed personalities. In their cruder aspects both fear and anger are seen in less well-adjusted personalities about us.

Sex life, with its altering standards, still continues to be the core of very distinct concern both socially and personally. The newer attitudes toward sex are in decided contrast to the older mores, and consequent divergence of conduct and considerable conflict of emotions takes place today around this deep-rooted trend.

Following these chapters on the emotional bases of conflict there are chapters on self-assertion and its relation to family life and a chapter on gregariousness. The self-assertive trends are dominant in everyone but may come within the socializing influences of the family and even larger groups. In truth, this socialization is essential to the higher social co-operation. We are, in fact, rather thrown between two fundamental directions in personality, one toward the complete submersion in the patterns laid down by the mass, through newspapers, propaganda and crowd-behavior made so easily possible by rapid communication, the other a definite orientation toward ego-centricism due to the strength of the "instinct of self-assertion."

There are two chapters which illustrate the general principles of emotional-instinctive growth, first in the case of the adolescent boy, second, in the instance of the adolescent girl. Here the author draws directly upon the alleged heterosexual and homosexual components in personality, showing the variation which occurs in the direction of these two trends in the two sexes.

The chapter on the relation of inferiority complexes to social behavior is much in point. The evils of over-compensation with its cruelty and harshness, often seen in the executive official is well indicated.

One of the most pertinent sections of the entire book is that which deals with rationalization, phantasy and social conduct. The essential distinction between imagination which rests upon reality and that which rests on phantasy is thrown before us. The author writes:

Imagination deals with life and shows toward the world of things and persons a thoroughly sympathetic and wholesome attitude. Phantasy, on the other hand, leads away from life. It clouds the world of persons and things. In the place of things that are or have been or may be, it constructs false creations that are only emotionally attractive and appeal only to the person who is trying to shut himself away from reality

Thus many shibboleths, social phantasies and imagined realities persist in social life long after objective investigation has revealed their subjective basis.

Another valuable discussion is that which throws into focus the relation of social control, through authority, to that of individual freedom. We need to answer, says our author, three types of problem in the process of education: (1) that of developing self-expression; (2) that of socializing this self-expression; (3) that of permitting divergences of conduct and thinking. The relation of taboo, authority and individuality in primary groups is here brought out.

The closing discussion of the volume deals with the growing societal obligation in the matter of caring for the feeble-minded and psychopathic who disturb our social equilibria.

Before concluding, one may mention two somewhat negative criticisms of this book. First, it draws rather indiscriminately on behaviorism, Freudian analysis and on the work of Jung and Adler without distinguishing among the fundamental differences in these various approaches to the subject at hand. This is due, no doubt, to the general state of incompleteness in these newer fields, but those social scientists who draw on modern psychology for aid would do

well to perceive certain deep-seated distinctions between Freud and Adler in the matter of motivation, and between the Watsonian behaviorism and the psychoanalytic approach. The second difficulty lies in the continued implication throughout the work of the theory of the unfolding of instinct, somewhat in the manner in which McDougall seems to hold that notion. That is, in spite of the general standpoint which is to trace the relation of personality to environmental situations, there is constant recourse in last analysis to definite instincts, as self-assertion, gregariousness, "fear" and "anger" (the latter are more properly emotions, of course), which develop independently of the action of the environment upon the organism. The work of W. I. Thomas on the rise of social attitudes traces this intimate relationship between social stimuli (other persons) and the individual's own response-system much more adequately.

On the whole, however, the book will serve a useful purpose for those who are concerned with the inter-relation of societal forms and the conduct of the person. It is well written and the treatment is everywhere amplified with concrete case studies.

KIMBALL YOUNG

The Morphology and Evolution of the Apes and Man. CHARLES F. SONNTAG, London: John Bole, Sons and Danielsson, 1924. XI, 364 pp.

This is a compact, useful, and reliable work in a field conspicuous for the technicality of its articles and monographs and the inexactness of its books. The author is Prosecutor to the Zoological Society of London and Demonstrator of Anatomy in University College. There are some sixty pages on the sub-anthropoid primates and forty on the external characters and habits of the anthropoids; a hundred on the skeleton and muscles of the latter; another hundred on the viscera and nervous system; and a concluding chapter on primate evolution. The bibliography contains over 500 titles. Most of the 57 illustrations are new. In succinctness and lucidity of statement the book is unusual. It combines a compilation of the most important facts previously on record with the results of original study. It will be of definite value as a work of reference and in the teaching of anthropology.

What Dr. Sonntag's volume most strongly suggests after its own merits is the tremendous deficiency that still exists in scientific

knowledge of the anthropoid apes as living organisms. His admirable flashes of psychological characterization only bring out the general darkness of the subject.

A. L. KROEBER

AFRICA

Atlas Africanus. Belege zur Morphologie der afrikanischen Kulturen herausgegeben im Auftrage des Forschungs-Institutes für Kulturmorphologie, LEO FROBENIUS und RITTER v. WILM. Heft I, II, III. Oskar Beck, München.

Das Unbekannte Afrika; Aufhellung der Schicksale eines Erdteils. LEO FROBENIUS. Oskar Beck, München, 1923. 185 pp., 194 plates.

Hadschra Maktuba; Urzeitliche Felsbilder Kleinafrikas. LEO FROBENIUS und HUGO OBERMAIER. Erste Lieferung. Kurt Wolff Verlag, München. 31 plates.

Under the direction of Leo Frobenius the Forschungs-Institut für Kulturmorphologie of Munich has undertaken an extensive ethnological survey of Africa. The results, in the form of maps showing the distribution of different culture-traits, are now in course of publication in the *Atlas Africanus*, of which the first three parts, containing seventeen sheets of maps, have appeared. The maps are excellently printed in black and one, two, or three colours, and each is accompanied by a sheet containing a brief description of the facts to which the maps refer. A general introduction by Leo Frobenius (12 pages) is included in the first part. The bibliographical references, for obvious reasons, cannot be supplied till the Atlas is complete, and therefore it is not easy to check the accuracy of any particular map. The Atlas will be of the greatest possible service not only to students especially concerned with Africa but to students of ethnology everywhere.

Frobenius, as was to be expected, is not content with the merely descriptive and classificatory work that such an Atlas involves, but uses the material thus provided for the purpose of extending his historical analysis of African cultures. Maps illustrating his theories form part of the Atlas, but he has also in "Das Unbekannte Afrika" provided a general statement of his theories as a whole. This magnificently produced volume, though it contains less than 180 pages of text, is illustrated with nearly two hundred full-page plates and

a vast number of maps and other illustrations. Frobenius, in fact, prefers the method of illustrating his theories to that of expounding them.

Although Frobenius does not often use the term "Kulturkreis" his position with regard to the historical development of culture is, in its fundamental principles, similar to that of Schmidt, Ankermann and Graebner. He recognizes in Africa as a whole two original culture cycles—*Urkulturen*, he calls them—which he names "Hamitic" and "Aethiopic." As to the ultimate source or origin of these two cultures he is not, apparently, at present greatly concerned. He associates them with two different types of geographical environment, the Aethiopic with the forest region, which he calls Hyläa, and the Hamitic with the Sahara, with the region of steppes and deserts. These original cultures and the compound formed of them have been overlaid by various intrusive cultures coming into Africa from outside. During a period from late Palæolithic times to some time after the introduction of metals there was, he thinks, in the regions around the Mediterranean, a double movement of culture, a "pendulum-swing," by which there was first a drift of culture from west to east (from Spain and Africa Minor to Egypt and Syria) and then an even more extensive drift from east to west. As a part or result of the last-mentioned movement certain new cultures—which Frobenius calls *Historische Kulturen*—entered Africa from Asia and Europe. The first in time (apparently) and the slightest in importance, was the Early Erythræan, which brought from Asia the bamboo bowstring and the slit drum. Then came the Middle Erythræan, of which there were two streams, North and South. The North Erythræan culture entered Africa from southwestern Asia and gave rise to the Cushitic culture of the regions around Abyssinia and the Middle Nile, its influence spreading westward and southward. The South Erythræan culture entered South Africa and gave rise to what Frobenius calls the Ophiric Colonial Culture of the ruins and gold-mines of Rhodesia. The Syrtic or Garamantic culture entered Africa from the north, from southeastern Europe, and spread over the Sahara and the Western Sudan. The Atlantic culture was carried by sea from the Mediterranean to the coast of the Gulf of Guinea. These various cultures, Hamitic, Aethiopic, Erythræan, Syrtic and Atlantic, have combined and interacted to produce the various cultures of Africa as they were before the more recent intrusions chiefly of Europeans.

It must be said in praise of Frobenius that he does to some extent endeavour to anchor his historical theories to the firm ground of archaeology. The North and South Erythræan, Syrtic and Atlantic cultures, and even in a sense the Hamitic are each connected with a definite archaeological stratum. Thus the South Erythræan, for example, is linked with the ruins and ancient mines of Rhodesia.

To each of these cultures Frobenius attaches a certain number of culture traits, which he speaks of as "symptoms." For example, amongst the symptoms which he regards as being in common to the North and South Erythræan cultures are the hare as a hero of mythology, the hut with a conical roof, the political system of a hierarchy of officials with four chief counsellors, and the complex of customs relating to the sacred kingship. Among the symptoms of the South Erythræan culture are the weaving of cotton, superstitions relating to teeth, certain burial customs, a form of granary, and a special form of metal ingot used as currency. Amongst the symptoms of the North Erythræan cycle are the custom of infibulation, eunuchs, stringed instruments of music, the throwing-knife, spinning by men, etc. The grounds for associating any symptom with a particular culture are found in a consideration of its distribution as shown on the map. Each of the intrusive cultures is regarded as having a certain centre, this being the region in which it first established itself and any trait that is found to be distributed fairly evenly around a centre may therefore be regarded provisionally as belonging to that culture.

The theory is interesting throughout, full of valuable suggestions; the arguments are always plausible even if only rarely conclusive, and they show a much keener appreciation of what does and does not constitute evidence than many of the writings of similar schools of ethnology. How far the theories will stand the test of time and further investigation it is impossible to say. There are many difficulties in the way of the acceptance of the scheme of Frobenius even as a provisional one. There is no space in a brief review to do more than mention one of them.

Frobenius calls his two original African cultures Aethiopic or Telluric, and Hamitic or Chthonic. The former belongs to the region of forests (centering in the Congo) and is agricultural, while the latter is pastoral and has now three centres, one in the northwest, one in the east about the Great Horn of Africa, and one in the southwest. The Hamitic culture is described as being matriarchal, while

the Aethiopic culture is patriarchal. Frobenius quotes Herodotus as showing that the former culture of North Africa was matriarchal, but thinks that pure matriarchy no longer exists either there or elsewhere. ("Reines Matriarchat als Kulturform gibt es aber auch auf andern Erdteilen nicht mehr.") In the Hamitic culture-cycle at the present time he finds only what he regards as remnants or survivals of the former matriarchate. The woman tends and milks the cattle, she builds the hut or shelter, and works leather. The man is the hunter and warrior. The woman chooses her husband; and rivals for the hand of a woman fight a duel to decide who is to have her. Virginity in a bride is insisted on, but married women have considerable sexual freedom. In what Frobenius regards as the patriarchal cycle, on the contrary, women are not permitted to have anything to do with the cattle, and leather is worked by the men. The custom of marriage by capture is found, and the widow belongs to the husband's relatives (levirate, etc.). Virginity is not esteemed.

In all this it is difficult to see exactly what sort of a picture of the matriarchate Frobenius has in his mind. He would probably not be prepared to deny, however, that such institutions as matrilineal descent of the group, matrilineal inheritance of property, matrilineal succession to chieftainship and rank, and matrilocal marriage, belong rather to the matriarchate than to the patriarchate. But when we consider the distribution of these customs we find that they are associated with the area of his Aethiopic culture cycle, with tribes which are entirely or mainly agricultural. On the contrary the strongest development of patriarchal institutions is found amongst people who depend largely on their cattle, some of them being purely pastoral.

On the basis of the theories of Frobenius it is difficult to see how we are to account for the fact that the nearest approach to matriarchy is found amongst people of the Aethiopic (patriarchal) cycle, while the most definitely patriarchal tribes are those in which cattle (which belong to the Hamitic matriarchal cycle) are the most important element in their culture.

Some of the difficulties might be got over by supposing that there are two distinct cattle cultures in Africa, in one of which women tend and milk the cattle and often work in leather, while in the other everything that concerns the cattle is entirely confined to men. The former might then be regarded as corresponding to the Hamitic culture of Frobenius. But the latter would not correspond to his

Aethiopic cycle. There is evidence that there are at least two distinct species of domestic cattle in Africa south of the Sahara, and it is generally supposed that both of these are Asiatic in origin, and that one came into Africa long after the other. They are both distinct from the Mauretanian ox which belongs to the region from which the Hamitic culture may be supposed to have spread.

This does not solve our difficulties, however, for we still have the problem of the matriarchal agricultural people of the forest region. And again it might well be held that in Africa there are two agricultural cultures and not one. One of these belongs to the forest and depends on the banana and manioc. The other belongs to savannah or steppe regions and depends on grains (millet, sorghum, etc.).

The scheme of Frobenius is too simple to account for all the facts of the distribution of culture in Africa, but this must inevitably be the failing of any such scheme. The history of culture has been a very long and very complex process, and any hypothetical reconstruction of it must therefore be complex also. It is probable that a complete theory would have to be just as complex as the facts that it sets out to explain. Any comparatively simple theory will have to leave a great deal unexplained.

The archaeological stratum with which Frobenius connects his Hamitic culture consists of the paintings and engravings of prehistoric times that are found in northwest Africa. In the work entitled "*Hadschra Maktuba*" reproductions of these from photographs and drawings are now being published. The whole work is to consist of six parts, the first of which has made its appearance. The plates are excellent and reveal to us an art of which the finest specimens are as good as anything in prehistoric art except the very best of the European paintings. The art here represented would certainly seem to provide a link between the late palæolithic art of Europe and that of the Bushmen of South Africa. But it is possible that it may possess an even greater importance than this. Evidence is accumulating that early Egyptian culture was influenced from the west and it is quite possible that further investigation of the early cultures of Africa Minor may throw much light on the beginnings of civilization in the Nile Valley. Those who are interested in the study of prehistoric art certainly cannot afford to be without "*Hadschra Maktuba*."

A. R. RADCLIFFE-BROWN

The Bagesu and Other Tribes of the Uganda Protectorate. JOHN ROSCOE. Cambridge: University Press, 1924. XIII, 205 pp., 32 pl., map. (20 s. net.)

Ashanti. R. S. RATTRAY. New York: Oxford University Press, American Branch, 1923. 348 pp., 144 illus., map, chart. (\$7.00).

Race Problems in the New Africa. The REV. W. C. WILLOUGHBY. New York: Oxford University Press, American Branch, 1923. 296 pp., 2 maps. (\$4.50.)

Mr. Roscoe's volume is the third and last contribution of the Mackie Ethnological Expedition to Central Africa, the two earlier volumes dealing with the Bakitara or Banyoro and the Banyankole. The region covered lies between Mount Elgon and Lake Albert, and southwestward around the boundary of the Uganda Protectorate to the Kigezi country bordering on the new Belgian state, Ruanda.

As this information was obtained only incidentally during his travels, these descriptions of eleven tribes are brief and somewhat random. Mr. Roscoe's record is as always reliable and a welcome addition toward a systematic survey of a new area.

Several of the brief accounts include kinship terms and vocabularies. Occasionally Mr. Roscoe offers from his very full knowledge some general remarks on the distribution of traits (e.g., p. 51). We note that cultural similarities are always interpreted as evidence of migration. On page 53 a list of 126 exogamous clans in a tribe whose total population is not more than several hundred is given without comment.

If Mr. Roscoe's descriptions are unfortunately meagre, there is abundant descriptive material in Mr. Rattray's book. It is modestly described as a first year's gleanings by a newly established department in Ashanti, but includes observations made over a longer period. It is only to be regretted that it is marred by verbosity and the tendency of the author to obtrude his personal reactions. The material deals almost wholly with social organization, rites, and the drum language.

Each individual belongs to both matrilineal and patrilineal exogamous named groups. This is looked on as literal inheritance of the blood from the mother, the spirit from the father. Marriage is between cross-cousins. Kinship terms are given at length, illustrated by pedigrees.

Land tenure is explained in terms of its parallelism with English feudal tenure. All land is owned and is secured by services and fees

to the overlord. It is transmitted in the female line, is not individually owned, and cannot usually be alienated. Hence it is clan property, in which the ancestral spirits have an interest.

Measurements of a small series of natives are considered by Mr. Dudley Buxton in an appendix. He observes that the relatively low standard deviations for stature and cephalic index (males, 5.53 and 2.47; females, 5.04 and 2.73) point to a homogeneous population.

The sub-title of Mr. Willoughby's book indicates its purpose: "A study of the relations of Bantu and Britons in those parts of Bantu Africa which are under British control." The discussion of social problems is temperate enough, even if described as "the foreign life that Britain has to handle," yet one wonders whether Mr. Willoughby will follow this book with one for the Bantu advising him what to do with the British foreigner. All this is prefixed by a generalized, but fairly adequate, description of Bantu life and thought. Mr. Willoughby does not specify however which tribes he writes about and the new material mentioned in the foreword is difficult to discover.

LESLIE SPIER

OCEANIA

The Morioris of Chatham Islands. H. D. SKINNER. (Memoirs of the Bernice P. Bishop Museum, Vol. IX, No. 1. Honolulu, 1923. 140 pp., 35 figs., 35 pls., 1 map.)

This monograph, by Mr. H. D. Skinner, Lecturer in Ethnology at the University of Otago, New Zealand, comprises two distinct parts dealing with the inhabitants and culture of the Chatham Islands, which lie some 536 miles east of Port Lyttelton, on the South Island of New Zealand. The first part in the main consists in a compilation of information relative to the Moriori migration, physical type, sociology, religion, and material culture, from accounts of early visitors that are not available to most students. The second part presents the results of a study of art and artifacts observed by the author in available collections in England and New Zealand. In addition there are numerous items of information gleaned by the author himself during a short stay on the islands in 1919. The paper as a whole is, of course, chiefly of interest to students of Polynesian culture, but in certain features it should also be of value to others interested in material culture in general, and particularly to those

engaged in the study of adze-head forms. For Polynesian historians the value of the work lies in the fact that, while the Chatham group was of little importance in the history of the area as a whole, all the information that can be brought together concerning its inhabitants and their culture is of the greatest importance in the ethnographic problem in Polynesia by reason of the fact that in these islands were preserved certain features characteristic of an early group of Polynesian settlers in New Zealand.

Mr. Skinner rejects the heretofore generally accepted theory as to the origin of the Moriori, based on Maori traditions, which considered the inhabitants of the Chatham Islands to be survivors of a fugitive remnant of a non-Polynesian people called the Muruiwi who are said to have been established in New Zealand before the Maori came. He points out that a "comparison of physical characteristics shows that the mythical (non-Polynesian) Muruiwi are the direct antithesis of the Moriori," and concludes by saying that on "the cultural side the evidence is no less convincing" (p. 18) as to the Maori Polynesian derivation of the Moriori.

In summarizing the observations on physical characteristics Mr. Skinner finds that the Moriori were slightly shorter and broader than the Maori. Their hair was black except for a reddish tinge which occasionally appeared, and straight or slightly waved. Their skin color approximated that of the Maori though perhaps it was a shade darker; while the nose form in general was of the usual Polynesian type (with a moderately elevated bridge and broad nostrils), though there was a frequent appearance of the high aquiline or hooked nose which appears also among the Maori as well as other Polynesians and Melanesians.

Characterizing him as "the greatest authority on Maori linguistics," Mr. Skinner quotes Archdeacon Herbert Williams who has written that the Moriori dialect is not correctly to be described as "a sub-dialect of New Zealand Maori" but "has as much right to be considered independent as any of the known dialects of the Polynesian language." The author of the work under review then proceeds with commendable perspicacity to point out a possibility overlooked by Archdeacon Williams, namely that the Moriori may have affinity with the little known Kai-Tahu dialect of the Canterbury and Otago Maori in the South Islands of New Zealand. This dialect, which differs widely from "dictionary or northern Maori," has never been redacted. This is an example of a type of consideration that may well

be borne in mind by all Polynesian ethnographers in dealing with derivations and relationships of local variations. From none of the large island groups of this area have we as yet adequate studies of local variations within the group. Mr. Skinner concludes his remarks relative to the Moriori dialect by writing that:

It is thus not improbable that further investigation will show a closer relationship between the Moriori and Kai-Tahu dialects than between Moriori and dictionary Maori. This is the more probable since . . . the material culture of the Morioris is much more closely related to that of the Kai-Tahu area than it is to that of any other part of New Zealand. (p. 43.)

While on the subject of language, I may remark that the *tch* sound indicated in the redaction of the Moriori dialect (see p. 88) occurs also in the Marquesan dialect, though it is not indicated in Dordillon's Dictionary.

The sociological and religious information accumulated may be summarized by saying that on the whole, and excepting those features that are obviously of local origin, they are clearly more closely related to the Maori culture, than to that of any of the other well-known Polynesian peoples. The variety of methods of disposing of the dead is surprising. Most of them find correspondences elsewhere in Polynesia, however. I cannot agree with Mr. Skinner that they are necessarily indicative of "diversity of racial strains." May they not rather have developed as a result of the fact that the ceremonial life of this group of people was, in comparison with that of the peoples of the larger island groups, less rigidly organized and regulated by a priesthood schooled and initiated in traditional ways? It was my impression in reading Shand's account of the Moriori published in the *Journal of the Polynesian Society* (vols. III and IV) that their lore and worship show every evidence of just the type of confusion that would creep in if the first settlers of the Chatham Islands were unaccompanied by a trained and initiated *tohunga*.

The Moriori manner of preparing foods, notably the fern root, their use of the earth oven, and method of making fire by the "plough method," were distinctly Maori and Polynesian. The rectangular and round house forms are respectively paralleled in the north and south islands of New Zealand. On the other hand the carving of human figures on the bark of trees, their manner of propelling sea-craft by rowing rather than paddling, and several of the modes of disposal of the dead (see Nos. 1 and 2, p. 46), appear to be quite unique.

The conventional similarity of certain carvings of human figures (Pl. IV, *a-c*) to one type of Easter Island figure is most interesting. In this connection Mr. Skinner writes that there are no comparable carvings in the round from the South Islands of New Zealand, though "the correspondence between that region and the Chathams when the human figure is expressed on the flat is remarkably close" (p. 130). Another striking correspondence to Easter Island is seen in certain Moriori blubber knives made of chert or obsidian. There is likewise a clear correspondence between Chatham Island and the South Island of New Zealand in the forms of chisels, stone weapons and tanged flakes of chert and obsidian. If Mr. Skinner can go on and conclusively demonstrate close relationship between the South Island of New Zealand, the Chatham Islands, and Easter Island, he will indeed have made himself famous in the annals of Polynesian ethnography.

The section devoted to adzes is the most important in this study. It will be of interest to all students of material culture, as well as to Polynesian ethnographers, for it is a distinct contribution in the line of establishing a method of comparing adze forms. Such a classification as is here worked out is of peculiar value in this area where there was no pottery except in one or two isolated localities and comparatively little stone cutting, for adze-heads represent the most important of the few types of imperishable tangible objects that are subject to classification and study by the comparative method. In addition to Mr. Skinner's able and thorough work on this subject we now have also Mr. Ralph Linton's descriptions of Marquesan types of adzes and comparison of their forms with those of adzes from other Polynesian groups and from other parts of Oceania (*Memoirs of the Bernice P. Bishop Museum*, vol. VIII, No. 5, pp. 320-30). These two students have demonstrated the fact that Polynesian adzes when considered with regard to form and shape of their several parts, cross sections, etc., fall into definite classes; and that the distribution of types, which varies in different localities in the area, is significant ethnographically.

Concerning the Moriori adzes Mr. Skinner writes as follows:

The evidence supplied by Moriori adzes is especially interesting because it is fuller than that of any other section. The Moriori adz-helve seems to have been distinguished by a very pronounced heel, a feature of Otago specimens but apparently was not used on Northern Maori helves except in Taranaki. It appears to be characteristic of Eastern Polynesia. An adz-helve

from Niue, in Western Polynesia, also presents some points of close resemblance. If any feature of material culture in the Pacific were to be named as more typically Polynesian than any other it would probably be stone adzes of Type I. The most characteristic feature of Moriori adzes of this type is the pair of knobs at the poll. (p. 131.)

In the legend to Plate Mr. Skinner quotes an excellent description of an adze head of this form written by Mr. Elsdon Best, who has previously contributed to the study of adzes by working out a descriptive terminology. (Dominion Museum Bulletin No. 4, Wellington, 1912.)

As is usual in Maori forms the face is convex longitudinally and transverse and the back is straight longitudinally, but slightly convex transversely. The sides are concave longitudinally to an extremely slight degree. Because of the sloping sides, the back is 1 2 inch narrower than the face. The blade from cutting-edge to shoulder is 1 1 4 inches long and shows an angle of about 50° on its lower part. On the face a short bevel of 1 4 inch has been ground to form a keen, flawless cutting edge, an unusual feature, that may be the result of grinding out a former gap in the edge. The chief peculiarity of this tool is the poll, which has two horns or projections which could only have been formed by rasping with a narrow piece of sandstone. The butt end of the face has been ground down for a length of 1 1 4 inches with the exception of these two lugs, which would certainly much assist the retention of the tool by the lashing.

Mr. Skinner's Conclusion (pp. 128-133) gives an excellent summary of the evidence presented in the paper and of the inferences and theories of its author, the most important of which may be put down in his own words.

The evidence derived from Moriori material culture is thus decisively in favor of the New Zealand origin of that people. (p. 132).

It has been shown that with one important exception—that of habitations which are of west Pacific types—the Moriori culture and the southern culture of the Maoris have points of relationship far and wide in the Pacific regions and that in some respects this relationship seems closest with eastern Polynesia and particularly with Easter Island. (p. 133.)

The numerous figures and plates which accompany the descriptive material are excellent.

This monograph will hold its place as a contribution of prime importance in the literature of scientific Polynesian ethnography. What is most significant about it, however, is the fact that it exhibits boldness and resource combined with careful scientific method in a way that leads us to feel that our New Zealand colleagues, and particularly Mr. Skinner, are advancing rapidly towards the solution

of their local ethnic problems and may confidently be expected to continue to make equally valuable contributions to the knotty cultural and historical problems engaging students of the Polynesian area as a whole.

E. S. CRAIGHILL HANDY

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DISCUSSION AND CORRESPONDENCE

CATALOGUE OF HUMAN CRANIA IN THE U. S. NATIONAL MUSEUM

THE last number of the *American Anthropologist* brought a note on this publication from Dr. Louis R. Sullivan, which, unless briefly answered, may lead to a misunderstanding and might possibly even endanger the undertaking, which would probably not be in the interest of American anthropology.

In the first place the review contains two errors. The first is that the number of crania covered by the first instalment is not 412 but 721. As to the second, it is not correct that the Catalogue does not conform to the International standards, which the author of the Catalogue personally helped to formulate. These standards define how measurements should be taken, but do not order or stipulate or even advise how many should be taken on a given occasion. That is left to the discrimination of the author, who in turn will naturally be guided by his experience and the circumstances of the occasion.

In this case previous experience as well as the circumstances dictated a reduction of the measurements to the essentials. The total records are to extend to probably over 10,000 crania, besides other parts of the skeleton. The undertaking is that of one man, more than half of whose time must be devoted to routine and other matters, with only an occasional help of an assistant. If the work is to be carried through as seriously and carefully as it should be, it requires the utmost application. After which comes the question of publication.

The publication funds of the Smithsonian Institution have through rise in costs become so reduced that only the essentials can be taken care of. Had it not been for strong recommendations from prominent men in anthropology, the issuance of the Catalogue, a mass of figures the setting up of which costs nearly three times as much as text, could hardly have been assumed. Even as it is, the printing of each instalment has to be considered apart, no more than one instalment can be taken care of yearly, and the number of separates of the first instalment had to be reduced to one hundred. And outside help there is none.

Under these circumstances the attempt to double or nearly double the amount of the work and that of the figures would have been, it

will probably be agreed, a poor policy. It was in fact, impracticable, just as were two other separately urged and in themselves desirable, extensions, namely the adding of illustrations, and an extended discussion of the results.

The plan as finally adopted is to furnish by means of this Catalogue to students of the subject more reliable and extensive basic data than have hitherto been available on the American and other skeletal material in the collections of the U. S. National Museum. Additional data on different groups are on hand. After the main work shall have been published it may, if conditions be propitious, be supplemented by such data. Meanwhile both the additional records and the collections stand freely at the disposal of any worker.

A. HRDLICKA

FINAL OBSERVATIONS ON THE CENTRAL ALGONKIAN DREAM DANCE

IN THE last number of the *American Anthropologist*, (N. S. 26, pp. 293-94), Dr. Truman Michelson is pleased to defend the data on the origin of the so-called "Dream Dance," as found in the pages of B. J. Armstrong's *Early Life Among the Indians*. He takes strong exception to the credence of the writer in the statements of certain Menomini informants that the ceremony was introduced among the Indians of that tribe by the Potawatomi of the Prairie as early as 1862, even going so far as to discredit their veracity in no uncertain terms. Just why he should suspect them of being less truthful than the "Sioux" girl interviewed by Armstrong in 1878, who claimed to him that she was one of a band of her people "massacred" by Custer in May, 1876, and thereafter commanded by the spirits to teach the new rite, is not quite obvious, however.

In the first place the Sioux woman must have been suffering from an odd lapse of memory, because General Custer was stationed at Fort Riley, North Dakota, during May, 1876. In fact, on the thirtieth of that month, he telegraphed my good friend, Dr. George Bird Grinnell from there, inviting him to accompany the troops on their trip to meet General Terry. Just when and where General Custer found time to "massacre" any Sioux on that trip is not apparent either. On the contrary, Custer and his entire command were wiped out by the Sioux at the Battle of Little Bighorn, June 25, 1876. While Dr. Michelson enlisted the aid of the War Department

to check up the Menomini data it seems to me that he might have saved himself embarrassment by ascertaining the facts about the Sioux girl. To use his own expression, she seems to have been "not entirely truthful, to put it mildly."

From long experience the writer is convinced that untruthfulness, deliberate or intentional, among native informants, speaking on matters of Indian history and ethnology, is very exceptional, and the few cases that have come to light are therefore the more striking. The outstanding example being the notorious late Alfred Kiyana, a Fox of Tama, Iowa, who had a veritable genius for the perpetration of fraudulent specimens and rituals which is well-known to many experienced students, and is still widely reprobated among most Central Algonkians and their neighbors, who feel that the publication of Kiyana's fraudulent texts and the like is damaging to their people. The dereliction of the Sioux girl, therefore, being so unusual, it is probable that the error was due to some mistake of apprehension, or interpretation. With this in mind, the writer has spent some little time in checking up the statements of his Menomini informants, and with interesting results.

First of all, Dr. Michelson and the Adjutant General of the U. S. Army to the contrary notwithstanding, there was a great deal of trouble and a bad Indian scare in Wisconsin in 1862-3. In the Report of the Commissioner of Indian Affairs for 1862, Moses M. Davis who was Agent to the Menomini, (Green Bay Agency), says:

Since the Indian massacre in Minnesota the whites in our frontier settlements have entertained serious fears of hostile demonstrations from the Indians in this State. I do not think there are any good reasons for such apprehensions. The Indians who have the rights of home in this State are thoroughly loyal. There are, however, quite a number of roving Winnebagos and Potawatomes, whose presence constantly annoy many of our citizens. There are some individuals among these roving Indians who are disloyal, and who would produce serious disturbances if they had sufficient numbers to do so. While making the Menominee payments early in March last, I discovered that Indian messengers, under the direction of "Dandy" the Winnebago chief, had visited the Menominees for disloyal purposes. The object of these messengers appears to have been to produce distrust of the success of the federal arms, and to get as many Menominees as possible to leave the reservation for some unknown place, where the wild Indian tribes were to congregate for the purpose of hostile operations at some future time. The following statement, from two reliable Menominees, embraces about all the information on the subject which I have been able to obtain.

Here follows a verbatim account of a conversation between two Indians, a Menomini and a Potawatomi, the latter trying to induce the Menomini to join his people and the Winnebago against the whites.

The following year, 1863, there were still greater disturbances, and the report of the Indian Commissioner for that year is full of references to them. In that report Dr. Michelson will do well to consult documents 199 to 229 for an account, from the original sources, of the complaints and movements of troops against the Winnebago, Menomini, and Potawatomi. Excitement ran high throughout the state, and in a letter dated Madison, July 10, Governor Edward Salomon of Wisconsin says:

Your department, it would seem, must concur with me in the conclusion that the present condition of things cannot be allowed to continue. The frenzy of a drunken Indian, or the machinations of bad men, may at any moment plunge our defenseless border settlers into the horrors of Indian outrages like those of Minnesota, and the prompt action of government is invoked by the unanimous voice of the people of this State.

On July 21 of the same year Gov. Salomon again wrote to the Secretary of the Interior concerning Indian troubles in Wisconsin, adding:

I deem it but justice to myself to say that, to the extent which the existing circumstances seemed to require last year, I acted, by distributing at convenient points and to proper parties, for border defense, some 2000 stands of arms, which had the desired effect of assuring the alarmed settlers for a time. The case seems now to have assumed a more serious appearance.

Document No. 216 contains a complaint (dated about July 28, 1863) signed by L. S. Barnes and 41 others which asks for protection from the Menomini and Winnebago, and Document 217, dated Washington, July 31, 1863, and signed by W. P. Dole, Commissioner, says:

Information having reached this office that, in addition to the Indians more particularly mentioned in the foregoing, certain Potawatomes have left their homes in Kansas, and are now in Wisconsin.

All these excerpts are of interest as corroboration of the Menomini statement that they received the Dream Dance from the Potawatomi of the Prairie (the Kansas Band) in 1862 or thereabouts, and that there was great trouble with the whites at that time, although both according to their own stories and the Documentary evidence, the

Menomini were in no way hostile to the whites. Now as to Michelson's statement that there is no record of the movement of Federal troops to the Menomini Agency in 1862, it is of course possible that militia may have been sent, and not Federal troops. The Indians would not have been capable of discriminating. However, I have the following data, kindly supplied by Miss Louise P. Kellogg of the Staff of the State Historical Society of Wisconsin. She writes:

I am inclined to think that the trouble to which the Menominee referred occurred in 1863 and not in 1862. The agent for the Menominee at that time was Moses M. Davis, a very able and reliable man. His report for 1863 indicates that there was an Indian scare and trouble in his jurisdiction. I have searched the Governor's papers, and I find that on July 14, 1863, the sheriff of New Lisbon, in Juneau County, telegraphed for help, that the Indians were killing the settlers. As a matter of fact some vagrant Winnebago did kill a Mrs. Salter, a trader's wife. Governor Salomon telegraphed to Gen. John Pope, then at Milwaukee in charge of the Department of the Northwest, to send troops to New Lisbon. Pope immediately sent off Captain Arnold and one company of the Thirtieth Regiment. I do not find whether they marched or went by train; in any case, I suppose the Indians would be alarmed. This company remained at New Lisbon about two months, and finally became implicated in the murder of a civilian, and the citizens begged that the soldiers be removed, that all the Indian trouble had died down, and that they had militia to protect them. That is all I get from the Governor's papers. I suppose something might be done with newspapers, but that is a longer task than I can undertake.

In all fairness to Dr. Michelson, however, it must be said that the only surviving one of my informants in this matter among the Menomini, now places the date of the trouble in the eighties, which does not agree with my original information. I think that enough has been said, however, to go a long ways toward showing that the Menomini informants who dated the arrival of the Dream Dance among their people in 1862, and who spoke of the subsequent trouble with the whites were not far wrong. Certainly they were not intentionally untruthful, unless it be in stating that the agent who sent for help was removed. I can find no data to corroborate this—perhaps he resigned or was transferred for some other reason, or it may be that the wish for his removal was father of the thought.

ALANSON SKINNER

FUEL AND EARLY CIVILIZATION

IN EARLY North America, wood was the source of heat and artificial light for those great areas which were covered more or less by woodlands. On the Plains, bison dung and driftwood supplemented the usual supply from the nearby woods. The Eskimo of the Arctic coasts depended on animal fats for fuel oil, the driftwood obtainable being too valuable in manufacture for use as fuel. The importance and significance of fuel demand and supply to the primitive American has, apart from Eskimo culture, generally been overlooked. The fact that village sites were moved when agricultural plots reasonably accessible to the village were exhausted or grass-grown, and that village growth was limited in part by the food supply accessible within an economic distance, has been frequently noted.¹ These same phenomena, however, were consequent quite as much upon the accessibility of an adequate fuel supply. Firewood was bulky, had to be gathered with the use of stone tools, and had to be transported without the use of draught animals or wheels. More transportation labor per capita was probably expended on firewood than on the production of other supplies. When, in time, firewood for miles around the village was used up, the village had to move; too populous a village would have to move too frequently. This economic conditioning of their social life was fully appreciated by the natives. The following notes will illustrate the point of view I have taken.

Roger Williams writes of the New England Indians² that:

This question they oft put to me: Why come the English hither? And measuring others by themselves, they say it is because you want firing. Having burnt up the wood in one place (wanting draughts to bring wood to them) they are fain to follow the wood, and so, to remove to a fresh, new place for the wood's sake.

An early Jesuit reported the difficulties of converting the Iroquois,³ due to their skeptical attitude toward European cosmology. The Father writes:

When they first heard of the eternal fire and of the burning decreed for the punishment of sin, they were marvelously impressed; still, they withheld their belief obstinately, because, as they said, there could be no fire where

¹ See, for example, E. Huntington's book, *The Red Man's Continent*, 1918.

² R. Williams: *A Key to the Language of America*, Proceedings of the Rhode Island Historical Society, 1872, p. 65.

³ *The Jesuit Relations*, Thwaite's edition, v. 1, p. 289 (1616).

there was no wood; then, what forests could sustain so many fires through such a long space of time? This absurd reasoning had so much influence over the minds of the savages that they could not be persuaded of the truth of the gospel.

A place without firewood for cooking and heating would furnish a hell better reflecting the social life of native America than that devised by people acquainted—as the Indians were not—with the slow-burning properties of sulphur. The good Father referred to finally got sulphur to exhibit to the Iroquois, and some, possessed of scientifically open minds, were convinced and converted.

The problem of collecting firewood was in part met, over the whole continent nearly, by the use of slave labor; ordinarily woman's work, it was, however, work well-adapted for slaves, *and no doubt encouraged the evolution of slavery and its expansion in the social pattern.* Jewitt, enslaved with his two English companions among the Nootka of Vancouver Island, for example, writes⁴ that he and his companions were

obliged, in addition to our other employments, to perform the laborious task of cutting and collecting fuel, which we had to bring in on our shoulders *from nearly three miles distance*, as it consisted wholly of dry trees, all of which, near the village, had been consumed.

Henry describes the economics of the Big Bellies, (Hidatsa), neighbors of the Mandan on the upper Missouri.⁵ The Mandan, living very near the Missouri banks could readily store enough driftwood during the summer to last through the winter, and had a single permanent village. The Big Bellies, however, living some distance from the main river, had to haul the driftwood from a considerable distance, and the drift consisted in large part of intractable trees of considerable size; the woodland supply of usable timber near their original village site was used up, so *for the winter* they had to have a separate village a long distance off, from which they returned in spring to carry on agriculture at their old village. In Henry's words:

Their custom of abandoning their summer habitation is less a matter of choice than of necessity, for this [summer] village has been so long settled that firewood is only to be got from a great distance, and their only recourse for a summer's stock is the driftwood on the Missouri. This they collect in the same manner as the Mandan's do; but *as they are more numerous, their consumption is greater.* Transportation from the river to the village is too tedious a piece of business for the winter.

⁴ J. R. Jewitt: *Narrative*, 1815, p. 114.

⁵ Alex. Henry, *Journals*, Coues' Reprint, 1905, v. 1, pp. 341, 349.

Lewis and Clarke in their long journey frequently had difficulty in getting the fuel needed for warmth and cooking.⁶ On the upper Columbia for example they note:

This evening, as well as at dinner time, we were obliged to buy wood to cook our meat, for their is no timber in the country, *and all fuel is brought from a great distance.*

Throughout the history of most peoples, firewood has been virtually the only fuel available for cooking, for warmth, and for industrial purposes, baking pottery, etc. Recently the use of coal and petroleum has been discovered, but these sources of fuel will very shortly be dried up. For power production, wind and water have been used for some time, and recent electrical investigations have made it possible to get heat by the conversion of the energy expended by falling water. Due consideration being given to the effect of these late mechanical developments, it appears that primitive social life was conditioned by the supply and demand for fuel in much the same way that ours is and has been. This conditioning should be more adequately accounted for in the study of economic evolution. (I have pointed out, for example, the relation of the fuel problem to the evolution of slavery.)

WILLIAM CHRISTIE MACLEOD

CULTURE AREAS OF AFRICA

There are a few points in the interesting paper by Mr. Herskovits on "Culture Areas of Africa" (*American Anthropologist*, Vol. 26, No. 1, p. 50) that I think are worth correcting. On page 55 it is stated that Hottentot huts are "round." It would be better to describe them as beehive-shaped, as there is some importance in the distinction between this form and the round hut with conical roof that is found in a large part of the East African area. On the same page it is stated that the clicks of the Bushman and Hottentot languages (also found, by the way, in the Bantu languages of the Southeast) are "made by drawing in the breath." Mr. Herskovits has been misled by inaccurate descriptions. These sounds are made by pressing the tongue against some part of the mouth and then forcibly withdrawing it. All the clicks are capable of being aspirated i.e., accompanied or followed without break by a strongly emitted *outward* breath. On page 56 we are told that in the East African

⁶ Lewis and Clarke *Journals*, Bourne's Reprint, 1904, v. 3, p. 69. This refers, of course, to aboriginal conditions. Compare v. 2, pp. 56, 197; v. 3, p. 67.

cattle area "cattle are not sacred in the sense that they are worshipped." With the qualification this is true, but things may be sacred (totems, for instance) without being worshipped, and throughout the area in question there are found customs which show very clearly that cattle are regarded as sacred. On page 57 there is a statement that warrior age-classes are not found elsewhere than amongst the Masai and Nandi. In the particular form which the age organization takes in these two tribes it is quite true that it is not found elsewhere, but the same principle of organization in slightly varying forms is much more widespread. There are the age-sets (*rika*) of the Bantu tribes of East Africa. In South Africa all the youths initiated at one time form an age-set, as I prefer to call it, often spoken of as a regiment. Each set is given a name by the chief and forms a unit for the purposes of warfare, being generally under the leadership of a son or other near relative of the chief. Mr. Herskovits repeats the common statement that "the Zulu organization in the southern portion of the area is a late development patterned after European procedure." All the evidence is against this. Such "regiments" or age-sets are found in other South African tribes besides the Zulu, and there is evidence that they go back to before the time when Tshaka organized the Zulu nation on a military basis. It is possible that the age-sets for girls were a creation of Tshaka. On page 57 we are told that the social organization of the Eastern Cattle area is mainly one of paternal descent, and on page 59 it is stated that in the Congo Area property is usually inherited from father to son. These two statements may be misleading, for there is a broad band of matrilineal peoples stretching across Africa from East to West, and taking in some part of the Eastern Area, and a very large part, probably about half, of the Congo Area. In this region we find matrilineal descent, inheritance, and succession, sometimes all three together, sometimes only one or two of them. It is just in instances such as this that the notion of culture areas must be used with care. It would be wrong to speak of the Eastern Area as being a patrilineal area, although a majority of the tribes in it are patrilineal. It would be still more erroneous to call the Congo Area patrilineal.

On page 62 it is noted that secret societies are characteristic of the Western Sudan. But secret societies are found, and are often of great importance throughout the greater part of the Congo Area.

Lastly, is it not at least somewhat misleading to apply the name "Berbers" to the nomadic inhabitants of the Desert Area?

DR. R. RADCLIFFE-BROWN

UNIVERSITY OF CAPE TOWN

THE TWENTY-FIRST INTERNATIONAL AMERICANIST CONGRESS, FIRST SECTION (THE HAGUE)

The sessions of the Twenty-first Congress of Americanists, First Part, were held at The Hague from the 12th to the 16th of August, 1924. The meetings of the Congress as a whole, and of the various sections into which the body was divided, occurred in the historic Binnenhof, the oldest building in the city, the use of which was given by the Government to the Congress. The opening meeting occurred in the large Ridderzaal, with Mr. Th. F. A. Delprat, the Chairman, presiding, and Dr. D. Alberts, the secretary, Mr. W. Westerman, treasurer, and Jhr. L. C. van Panhuys, the Honorary Secretary on the rostrum. Greetings were conveyed to the Congress from representatives of the governments and of the scientific societies of the numerous countries of North and South America and Euorpe represented, and after an adjournment for luncheon, the first general meeting took place. Dr. P. Rivet (Paris) read a paper on "*L'origine du travail de l'or en Amérique*," and Professor K. Sapper (Würzburg) one on "*Die Zahl und Volksdichte der indianischen Bevölkerung Amerika's in vorspanischer Zeit und in der Gegenwart*." In the afternoon there was a tea tendered by the American Minister, and in the evening there was presented a paper by Mr. G. J. Staal to the entire Congress, on Dutch Guiana (Surinam); there was an exhibition of motion pictures which included the activities of the Bush-Negroes of that country.

The mornings of the next three days, and that of the last day, were given over to section meetings. These comprised five in number—Anthropology, Archaeology, Ethnology, Linguistics, and History and Geography. The papers concerned themselves with data from North America, except in the case of those dealing with the natives of Tierra del Fuego, and the Dutch colony at Surinam, since this part of the Congress was meant to devote itself to these regions, the papers on South America and the Eskimo being presented at the Second Part (Gothenburg). The afternoons were given over to excursions near The Hague, which were arranged by the Committee in charge. On the 13th, the Congress was received at Leyden, where the members were shown the National Museums of Ethnology and Archaeology and conducted through the University. In the evening

a symphony concert was arranged at Scheveningen. The following afternoon, there was a trip to Haarlem, where Professor Eug. Dubois lectured on the remains of *Pithecanthropus erectus*, whereupon the members were taken to the Franz Hals Museum. A reception given by the British Minister in honor of the Congress took place in the evening. On the afternoon of the 15th, there was an excursion to Amsterdam, tendered by the Royal Geographical Society of the Netherlands; it consisted of a boat trip through the harbor of Amsterdam and through the Zaan river beyond Zaandam. Another symphony concert followed in the evening. The final day was occupied by two meetings of the Ethnological section in the morning, the closing meeting in the afternoon, followed by a visit to the Peace Palace, and a reception at the Kurhaus in Scheveningen given by the Municipality of The Hague.

There was a large attendance at all the meetings, and the gatherings were thoroughly international in their membership. Delegates were present from countries as distant as China and Chile, and practically all of the European countries, including Russia, were represented. On the morning of August 17, the members of the Congress departed by train for Gothenburg, where the Second Part was held. The program of papers follows:

Dr. P. Rivet: *L'origine du travail de l'or en Amérique.*

Prof. K. Sapper: *Die Zahl und Volksdichte der indianischen Bevölkerung Amerika's in vorspanischer Zeit und in der Gegenwart.*

Mr. G. J. Stahl: *Something about Dutch Guiana (Surinam). Illustrated by a film demonstration.*

Mr. Melville J. Herskovits: *On the Negro-White population of New York: the use of the variability of family strains as an index of homogeneity and heterogeneity.*

Dr. V. Lebzetter: *Ueber Indianer Schadel aus der Sierra del Sol.*

Mr. R. Bennett Bean: *Studies among the Blacks of the United States and the Philippines.*

Dr. G. Hatt: *Archaeology of the Virgin Islands, West Indies. Illustrated with lantern slides.*

Prof. J. P. B. de Josselin de Jong: *A natural prototype of certain "three pointed stones."*

Mr. Th. A. Joyce, O. B. E.: *A remarkable and unique example of cast gold-work, discovered at Palenque by de Waldeck, now in the British Museum.*

- Prof. Dr. A. W. Nieuwenhuis: *Die Grundbegriffe der Magie unter der Nord Amerikanischen Indianer.*
- Prof. M. S. Handman: *The Mexican Indian in Texas.*
- Dr. W. Bogoras: *New Ethnological Problems in Polar Countries.*
- Prof. Dr. W. Schmidt: *Die Bedeutung der Genitivstellung für den Sprachaufbau in den Sprachen von Nordamerika.*
- Prof. Franz Boas, Ph.D.: *Die Klassifikation der Amerikanischen Sprachen.*
- Prof. W. Thalbitzer: *General Indian Linguistics.*
- Dr. Mitchell Carroll: *The preservation of archaeological sites as national monuments in the United States of America.*
- Dr. L. Capitan: *La question du paleolithique dans l'Amérique du Nord.*
- Prof. Ing. A. Posnansky: *Die astronomische Bedeutung des grossen Sonnentempels von Tihuanacu.*
- Prof. Dr. A. W. Nieuwenhuis: *The difference of the conceptions soul (animus) and spirit (spiritus) in American Ethnology.*
- Dr. E. C. Parsons: *The religion of the Pueblo Indians of New Mexico and Arizona.*
- Prof. R. H. Lowie: *Psychological considerations in the study of North American religion.*
- Mr. Ph. Marcou: *Langues indiennes et langues indoeuropéennes. Ressemblances et différences.*
- Mr. A. G. Morice, O. M. I.: *L'abstraction dans la langue des Porteurs.*
- Mr. Leonard Bloomfield: *The Menomini language.*
- Mr. C. Jane: *The administration of Colon in Espanola. (1493-1500.)*
- Hofrat Prof. Dr. E. Oberhammer: *Die Karte des Pierre Desceliers von 1553.*
- Dr. F. C. Wieder: *The terrestrial globe of Johannes Schöner, 1523.*
- Dr. L. Capitan: *Les galets coloriés à Teotihuacan.*
- Prof. Dr. G. Steinmann: *Zur Urbeseidlung Amerika's.*
- Dr. A. Mestre: *La problema del poblamiento aborigine de Cuba.*
- Dr. E. Vatter: *Russische Forschungsarbeit in Nord-Amerika.*
- Prof. Dr. K. Th. Preuss: *Heilbringer und Kulturentstehung in den Anschauungen der Indianner.*
- Hofrat Dr. Franz Heger: *Das Museum of the American Indian in New York.*
- Dr. A. Sauvageot: *Sur la comparaison des langues américaines. (Questions de méthode.)*
- Pr. Gerl. Royen, O. F. M.: *Die nominale Klassifikation in eingigin Sprachen Amerika's.*

- Miss J. A. Wright: *West Indian History*.
- Mr. Herbert J. Spinden: *Chronology in Ancient American history*.
- Mr. Jules Leclerc: *La découverte de L'Amérique par les Islandais*.
- Jhr. L. C. van Panhuys: *About the "trafe" superstition in the colony of Surinam*.
- Prof. M. Gusinde, S. V. D.: *Meine Reisen nach den Feuerländern*.
- Dr. Fritz Röck: *Altamerikanische Kulturbeziehungen zwischen Nord-Mittel- and Süd-Amerika*.
- Prof. C. V. Hartman: *Kunst unter den Natur-völkern*.
- Mr. C. H. de Goeje: *Guyana and Carib tribal names*.
- Mr. W. Ahlbrinck, C. s. s. R.: *Caraïb people and nature; a. Material life of the red skin and nature; b. His spiritual life and nature*.
- Miss J. A. Wright: *The North American State of Florida*.
- Dr. Rafael Altamara: *Résultats généraux acquis dans l'étude de l'histoire coloniale américaine. Critère historique qui s'en suit*.

ANTHROPOLOGICAL NOTES

DR. CHARLES F. NEWCOMBE died at Victoria, British Columbia, October 19, 1924, of pneumonia aggravated by a long standing weakness of the heart. He was at Alert Bay, where he was negotiating for totem poles when he was taken ill, and had to wait three days for a steamer to take him to his home. Dr. Newcombe, born at Newcastle-on-Tyne, was seventy-three years of age. He graduated in medicine, which he practised in England and America for some years. The last thirty-five years he spent in Victoria devoting himself to local studies in history, archaeology, ethnology, and natural history. He probably was the best authority on the early voyages to the Pacific coast. He knew intimately the coast flora and was an authority on the habits and food of sea-lions as affecting the salmon industry.

The readers of the *American Anthropologist* will be particularly interested in his contributions to anthropology. The collections in the Provincial Museum at Victoria for the most part were made by Dr. Newcombe who wrote a guide to them in 1909. In the spring of 1901 Dr. Newcombe joined Dr. Swanton in the Queen Charlotte Islands who was investigating the Haida for the Jesup Expedition of the American Museum of Natural History. His knowledge of the local geography, useful at the time to Dr. Swanton, was embodied in a map which accompanied Dr. Swanton's publication. Beginning in 1902, he served the Field Columbian Museum of Chicago as field ethnologist, making extensive collections among all the coast tribes and also those on the Thompson and Fraser rivers. He installed these collections in 1905, making a report which covered his work. He took a company of Nootka Indians to the Louisiana Purchase Exposition in 1904. The village established there received a gold medal. At intervals until his last illness he executed many commissions for various museums in America and Europe.

In the summer of 1922 the writer had the privilege of traveling along the coast of British Columbia with Dr. Newcombe. His companionship was delightful, and the richness of his knowledge became evident during the trip. Nearly everyone knew him or knew of him and greeted him as an old friend. He recognized every plant and he was able to tell whatever of interest there was to tell about it: who first described it, its range, etc. Each locality reminded him of early historical happenings. He knew the ethnology of the region

and would impart it, but with hesitation and modesty. This personal paragraph is included for the reason that it was only by prolonged and intimate contact that a just estimate could be formed of Dr. Newcombe's personal charm and scholarly attainments, so retiring and modest was he. It is to be regretted that this modesty prevented him from publishing more fully. He has to his credit, however, several notable works:

Petroglyphs in British Columbia, reprint from Victoria Daily Times, Sept., 1907.

Guide to Anthropological Collections in the Provincial Museum, Victoria, B. C., 1909.

The First Circumnavigation of Vancouver Island, Archives of B. C., Memoir No. 1, 1914.

Menzies' Journal of Vancouver's Voyage (editor).

Botanical and Ethnological Appendix to the same, British Columbia Archives, Memoir No. 5.

His larger contribution was, however, the indirect and intangible influence he exerted locally in the building up of the Provincial Museum and Library with the Archives to which he contributed, and more widely as he welcomed visiting scientists and gave them generous assistance.

P. E. GODDARD

DR. GEORGE GRANT MACCURDY was reelected Director of the American School of Prehistoric Research in Europe at the annual meeting of the Managing Committee, held in Washington on January 3.

The fifth year of the School will open in London on June 25. The itinerary of museums, excursions, and excavations will include London and southern England; Brittany and Paris; Toulouse and the Pyrenees from Foix and Niaux by way of Tuc; Trois-Frères, Montespau, Lespuque, and Lourdes to Isturitz; Madrid, Altamira, Castillo, and La Pasiega; Périgueux, Les Eyzies, and the caves of Dordogne, including a month (August) of digging in the leased site of Castel-Merle at Sergeac; Neuchâtel, Berne, Interlaken, and Zurich; Tübingen, Heidelberg, and Bonn; Liège and Brussels.

The summer term will end September 25. Students who remain for the winter term may, after consultation with the Director, choose the center of learning which seems to offer the best facilities for the working out of the problems in which they are especially interested.

Requests for further information should be addressed to Dr. George Grant MacCurdy, Peabody Museum, Yale University, New Haven, Conn. (After June 25, care of American University Union, 173 Boulevard Saint-Germain, Paris.)

Dr. Gaston Lalanne of Bordeaux, who contributed much to the science of Prehistoric Archeology through his discoveries at Cap-Blanc and Laussel in Dordogne, died at Castel d'Antorte on December 16 at the age of 62 years.

A NEW research institute has been established at Yale University under the name "The Institute of Psychology." One section of the Institute is to be given over to anthropological research, a Professorship of Anthropology having been established, to which Doctor Clark Wissler has been called. Doctor Wissler, will, however, give but part of his time to the work at Yale and so not sever his connection with the American Museum of Natural History in New York. Mr. T. F. McIlwraith and Miss Helen H. Roberts have been appointed research assistants in anthropology and are now in residence at Yale. The other sections of the Institute so far established are, animal and anthropoid behavior, Professor Robert M. Yerkes, and physiological psychology, Professor Raymond Dodge. Several other sections will be added in the near future, which with those just enumerated will cover all the main approaches to the human problem. No formal instruction will be given, but advanced graduate students and mature specialists may be admitted. While the prime objective of the Institute is productive research on the part of its staff, it will also afford advanced training in research to such students as may be admitted to its laboratories. At present there is one fellow in anthropology, Miss Beatrice Blackwood of Oxford, England. Students admitted to the Institute will have access to the collections in the Peabody Museum at Yale and also to those in the American Museum of Natural History in New York. Further, the affiliation of the Bishop Museum in Hawaii with Yale University offers opportunities for research in the Pacific area. The present anthropological investigations in the Institute have to do with music and religion among the Island peoples of the Pacific and population problems in the United States.

Under the auspices of the Museum of the American Indian, (Heye Foundation), Dr. F. G. Speck and Dr. A. I. Hallowell spent part of the past summer on the southern coast of Labrador, where several bands of Montagnais-Naskapi were visited. Dr. Speck completed the first preliminary survey of all the bands of the peninsula, securing names and comparative ethnological and linguistic material which distinguishes them from each other. The information obtained was sufficiently detailed to permit the mapping of the territories of the local bands throughout the Labrador peninsula. Excavation at one of the sites along the coast has returned pot sherds of a type comparable to so-called archaic Algonkian, thus extending the pottery horizon farther east and north than heretofore recorded. Dr. Hallowell was able to obtain anthropometric and observational data on the physical traits of the Montagnais-Naskapi which seems to distinguish them clearly from the Labrador Eskimo on the one hand and the Algonkians south of the St. Lawrence. This is best illustrated in respect to stature and head form.

Prof. Herman Lundborg, founder of the Race Biological Institute of Sweden located at Upsala, undoubtedly Sweden's greatest anthropologist, who has been interested in mapping the ethnic elements of Scandinavia, is expected to visit America this winter as the guest of several Universities. Prof. Lundborg's purpose is to deliver a series of lectures.

We note with profound regret the premature death of Dr. Louis R. Sullivan on April 23, 1925. For many years, and at the time of his death Dr. Sullivan was connected with the American Museum of Natural History.

On February seventh and eleventh Dr. Edward Sapir gave a lecture entitled "Our Neighbors—Yellow, Red and Black" which formed part of the series of lectures conducted by the Victoria Memorial Museum during the past winter.

The Third Pan-American Scientific Congress was opened at Lima on December 20, 1924. There were several sub-sections devoted to the various aspects of Americanist studies, notably Anthropology, Archaeology and Prehistory, Ethnography and Folk-lore.

At the invitation of the University of Wisconsin, Dr. Ales Hrdlicka delivered three lectures at the university, on January 12, 13 and 14 on "Human origin and evolution." On January 16 he also delivered a lecture on "Some newer aspects of human evolution," before the Anthropological Society of St. Louis.

THE HUXLEY Memorial Medal for 1924 of the Royal Anthropological Institute was presented to Dr. René Verneau, of Paris, at a meeting of the institute held on November 25.

The Museum of the American Indian (Heye Foundation) has continued its activity in the field during the past summer, Mr. Wildshut working among the Bannock and Shoshone and the Crow, Cheyenne and Blackfeet; Mr. Saville excavating on Long Island; Dr. Gilmore collecting among the Omaha, Winnebago and Arikara; Mr. Cadzow examining Iroquois and Algonkian sites in New York; Mr. D. E. Harrower collecting among the Indians in Nicaragua; and Mr. A. H. Verrill working in Panama among the Boorabi, Terribi, and Cocle Indians.

Prof. M. H. Saville and Mr. F. W. Hodge have been elected MEMBERS TITULAIRES, and Dr. Robert H. Lowie Membre correspondents of the Société des Américanistes de Paris.

Mr. Arthur C. Parker has resigned from the office of State Archaeologist of New York and accepted a position as Director of the Municipal Museum in Rochester, N. Y.

LOUIS ROBERT SULLIVAN

By E. A. HOOTON

THE untimely death of Louis R. Sullivan deprives Physical Anthropology of one of its most competent American workers, a man who would have achieved great distinction in his chosen field had he been able to continue his work even a few years longer.

Louis Robert Sullivan was born at Houlton, Maine, May 21, 1892. He did his undergraduate work at Bates College and received the degree of A.M. from Brown University in 1916. In this same year he joined the staff of the American Museum of Natural History, of which he remained a member until his death. During the war Sullivan was occupied for some time in anthropometric work in the army. After he returned to the American Museum he completed the requirements for the degree of Doctor of Philosophy in anthropology at Columbia University. He was then loaned by the American Museum to the Bishop Museum of Honolulu, Hawaii, in order to take charge of the work in physical anthropology in connection with the Polynesian expeditions that institution was undertaking. During his sojourn in the Hawaiian Islands Sullivan collected a vast amount of anthropometric data on race mixtures in Hawaii. This material constitutes the most important contribution to this vital problem which has yet been made. The death of its author before the completion of the analysis of this material leaves the fate of this invaluable research in doubt.

Some time after his return to New York Sullivan contracted pleurisy and it became necessary for him to go to Arizona to recuperate. Here he seemed to regain his health and continued to write scientific papers and to work upon his Hawaiian data. In the summer of 1924 he returned to New York, but a recurrence of his malady forced him to go back to Arizona after a few months.

Although the American Museum gave him every help in his struggle for health, he died late in April of the present year, in the thirty-third year of his age.

Sullivan's contributions to physical anthropology include a goodly number of excellent papers upon a variety of subjects, but especially upon Polynesian anthropometry. He also wrote a manual of anthropometry for field workers, "Practical Aspects of Anthropometry," which is admirable. Everything that he did was obviously the finished product of a competent professional worker. He had a keenly critical mind and was admirably equipped for research in his subject. He was independent in thought and in his methods of work. Although intolerant of the pseudo-scientific propaganda that often passes for anthropology, Sullivan was unprejudiced and cultivated no scientific bias. His attitude toward new ideas and new methods was unvaryingly receptive, though critical.

This was a man whose character and personality quickly won the respect and friendship of those with whom he was associated. Rarely has a young anthropologist been able to win such a substantial recognition of his personal and scientific merits in so short a space of time.

Added to the regret that the loss of so promising a worker inspires, is a certain resentment and indignation that such a brilliant scientist should have been forced to fight not only ill-health but also poverty during the productive years of his youth. Perhaps this premature death might have been prevented, had this young man received a living wage at the outset of his career. There is not one research anthropologist attached to a museum staff nor a single teaching anthropologist who, from his salary, can purchase for himself and his family the nourishing food and social relaxations enjoyed by a first-rate mechanic. The only anthropologists who can pursue their professions in comfort are those who have inherited or married money.

Be this as it may, anthropology has lost in Louis R. Sullivan one of its most able and devoted exponents.

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A POSSIBLE PRE-ALGONKIAN CULTURE IN SOUTHEASTERN MASSACHUSETTS

By EDMUND BURKE DELABARRE

THE Algonkian tribes who occupied New England at the time when its known history began were probably not its earliest inhabitants. Remains of what may have been a pre-Algonkian culture have been discovered, notably that of the so-called Red Paint People of Maine. No indication, however, is given as to when these people flourished, and but little as to when the Algonkians themselves first arrived and displaced them. There is evident value in any discovery that contributes even slightly to the problem of determining how long this portion of the country has been inhabited. The writer believes that he has found evidence that some tribe, whether Algonkian or pre-Algonkian he does not know, was living in southeastern Massachusetts at least a thousand years ago. The evidence is in the form of numerous stone implements, of such variety as to indicate a probable village site, lying scattered widely over a surface that is now covered by a deposit of several feet of salt-water peat.¹

Grassy Island in Taunton River is the site of these deposits. It is in the town of Berkley, in a shallow broadening of the river called Smith's Cove, which lies between that town on the east and Dighton on the west. The southerly projection of Berkley, a peninsula two miles long between the Taunton and Assonet rivers, is known as Assonet Neck. This place is noted as having been, together with Mount Hope in Bristol, Rhode Island, the

¹ Abner Morse, in *Traces of Ancient Northmen in America*, 1861, describes ancient hearths found under four feet of peat on Cape Cod. If he was correct as to their nature, they seem to give evidence of another inhabited site at about the same period as that of the one here described, although there is no need to accept his assumption that they were constructed by Northmen.

last land retained for their own exclusive use by the Wampanoag Indians; also, as being bordered by extensive salt-grass meadows which were the first source of hay for the early settlers in Taunton; and, finally and most widely, as the location of the famous inscribed Dighton Rock, situated near its northwesterly corner on the edge of Smith's Cove. The island is about fifty-six rods north of this rock.

Since 1640, when Grassy Island was first assigned to an individual owner as of value for its hay, the deeds conveying it have always described it as comprising three acres, "more or less," although at the present time it contains but little more than an acre. It is roughly triangular in shape, with a length of about 550 feet and a greatest width of 260 feet. It is entirely submerged at the highest tides, and its level surface is covered wholly with salt-marsh growths, underneath which there is peat overlying what was once doubtless an exposed surface before the peat-growths began, but which is now exposed only at low tides along the edges of the island where the peat has washed away. This "ancient surface," as I shall call it, is sandy, and, in places, somewhat stony soil, sloping slightly downward toward the south at the rate of about one foot in 200; and thus, while the depth of peat above it is five feet at the southerly end of the island, it is only about $2\frac{1}{2}$ feet at the northerly end. Along the westerly and most exposed edge of the island, erosion by tides, storms, and fiddler crabs, continually but slowly weakens and undermines the peat, so that from time to time sections of it split off and are washed away, leaving the remaining edge of peat almost vertical with a sandy beach at its foot, where the line of junction between ancient surface and later peat-growth is clearly marked. The general appearance thus produced can be seen in the first two of our illustrations.

My attention was called to this island by a report that a pocket of Indian relics had been found there some fifteen or twenty years ago, from which something like a bushel of specimens had been removed. During the last seven years I have made occasional visits to the island, about seventy-five in all, at favorable periods of low tide, and have secured numerous specimens

from the beach and by excavation underneath the peat along the exposed edge. I made an attempt to mark off the excavation work into measured sections and thus to definitely locate each find, but shortly abandoned it, partly because of the difficulty of maintaining stakes subject to the wash of tides and sure to be broken by ice in the winter, and largely because there appeared to be little or no significance in the relative positions of the objects found. Apart from those already washed out and picked up from the beach, these were all discovered lying upon the ancient surface and to a depth of some nine inches below it, scattered irregularly about through a length of about 300 feet and a width extending as far as excavation was made, which in some places reached to as much as fifteen or twenty feet. The impression produced was that of a village or encampment site, where in the course of time numerous articles were left about in a haphazard manner, or thrown away when broken. This interpretation is strengthened by the character of the artifacts, many of them being such as would naturally occur, at least in such numbers and variety, only at a place of residence,—such as mortars and grinding-stones, and likewise very numerous chips, cores and unfinished pieces indicating a place of manufacture. A considerable length of occupation seems to be attested by the number of articles accumulated on the site, and perhaps by the depth to which some of them lie buried. It is impossible to form any idea as to the actual extent of the occupied area, inasmuch as only about 1000 square feet of it have been uncovered, which is probably a very small proportion of the whole. For this reason the objects thus far discovered may be far from adequately representative of the character of the culture there exhibited.

A large number of chips, flakes, broken fragments, cores, and unworked pebbles of materials used in manufacture, are found everywhere on the site.² Besides these, I have gathered approximately 400 artefacts, about half of which were dug out and

² In four scattered places, for instance, which were carefully worked over, covering about 42 square feet, I counted 44 unworked pebbles of quartz, one of them over four inches long, 61 quartz pieces that showed some marks of flaking, 7 green shale chips, and 9 chipped objects. Chips and cores, as well as finished objects, were found in considerable numbers as much as 8 or 9 inches below the surface.

observed *in situ*, the rest being from the beach. The accompanying plates exhibit representative specimens of them. About three-fourths of them are chipped objects: arrowheads, spear-heads, knives, perforators. Many of these are shown in Groups A,³ B, and E (Plates I-III). Most of them are rather small or ordinary in size, only a very few broken pieces having been found which were parts of larger spear-heads. The largest shown are: in Group B, ninth in next to last row, an unusually perfect one of rhyolite, nearly four inches long; in Group E, bottom row, numbers 2 and 4, each about $4\frac{1}{2}$ inches long, and number 3, broken both ends, which must have been a very long one. Beyond these in the same row are pictured two others that were probably long. They are of all grades of skill in workmanship, some of them very excellent, and do not differ noticeably in this respect from the products of later Indian art. There is, however, one respect in which these earlier forms differ from later ones, which is interesting and perhaps significant. The Grassy Island Indians made a smaller proportion of their arrow-heads of triangular shape (Division II of Wilson's classification) and a larger proportion of them stemmed (Division III), than did the later local Wampanoags; and made a very much smaller proportion of them of quartz and a much larger proportion of other kinds of stone, if my observations are representative. There are two localities on or near Assonet Neck where I find numerous arrow-heads in ploughed fields and which I judge to have been inhabited sites, one of them near Grassy Island and the Taunton River, the other across the Neck on the Assonet River side. The following Table shows the

	Number of specimens	Percentage of:			
		Shape II	Shape III	Quartz	Non-quartz
Grassy Island (ancient Taunton River site)	265	17	83	39	61
(Wampanoag)	286	25	75	72	28
Assonet River site (Wampanoag)	612	83	17	89	11

³ In Group A a few were accidentally included which did not come from Grassy Island. in first row, nos. 2, 3, 5, 6; second row, nos. 2, 5, 9; third row, nos. 1, 5, 9.

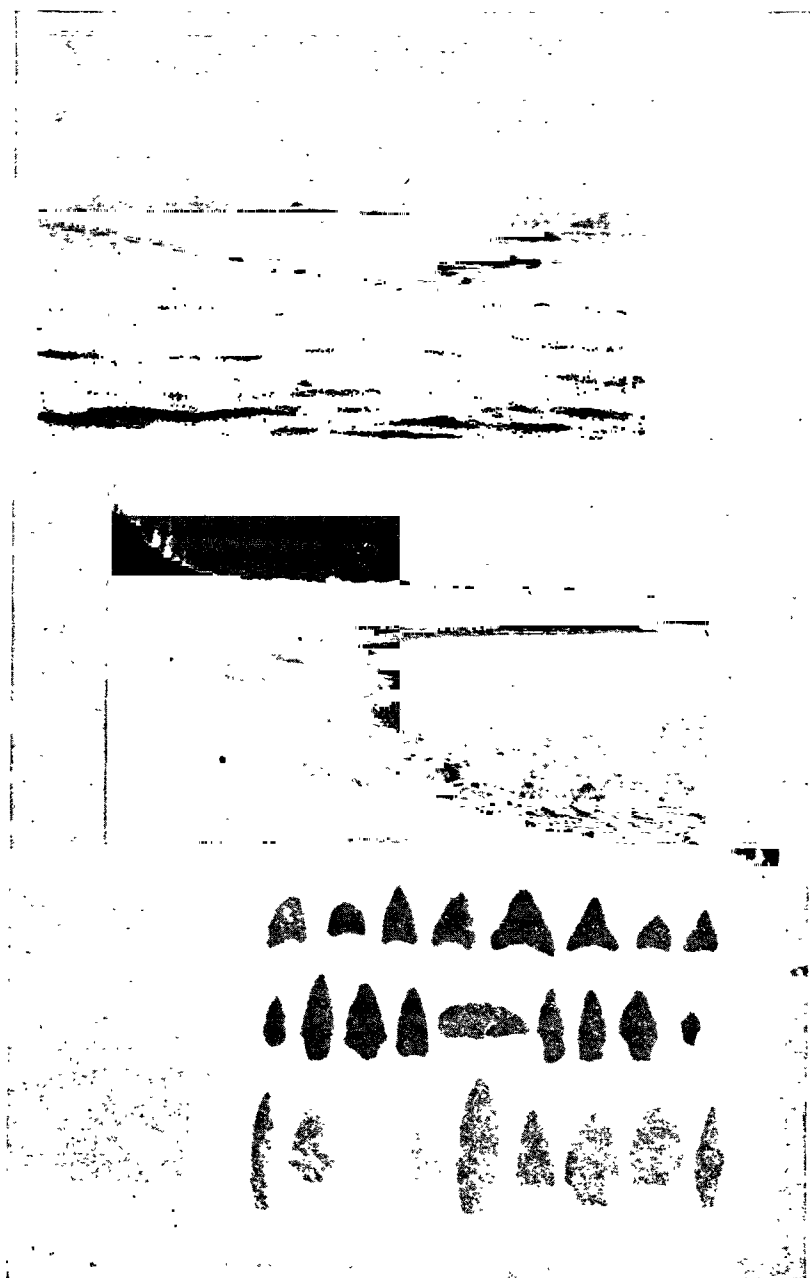


PLATE I

1. Grassy Island from the South
2. West Shore of Grassy Island, Looking Southward
3. Artifacts from Grassy Island: Group A.

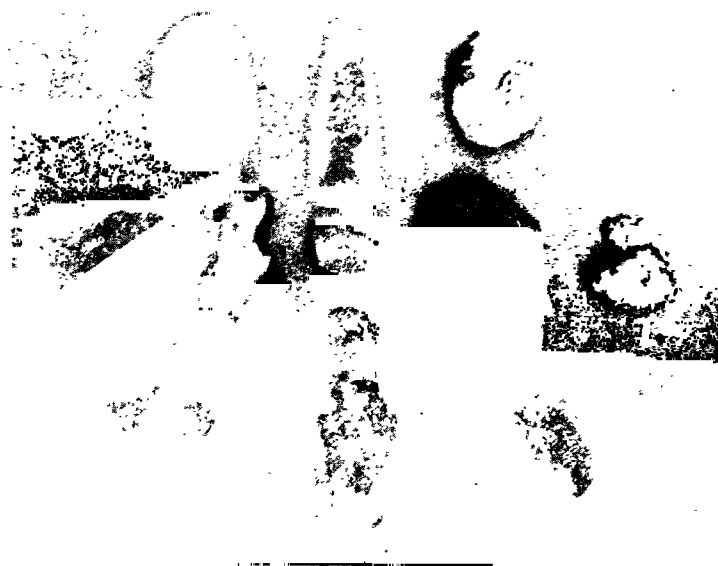
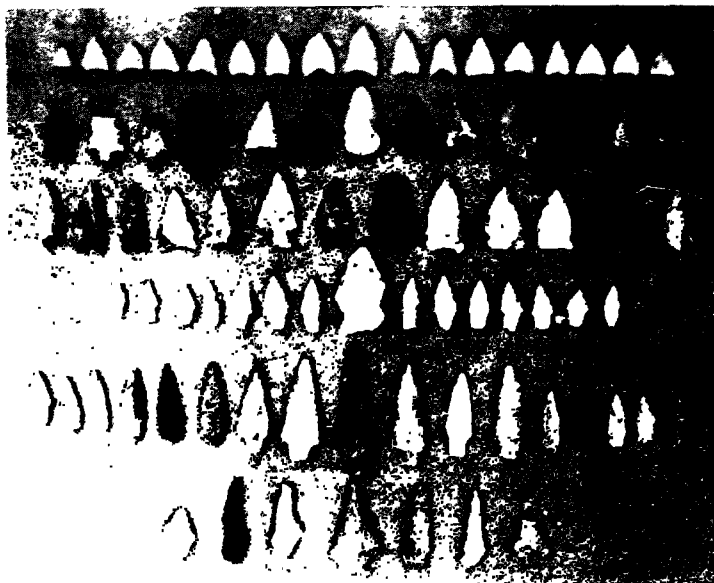


PLATE II
Artifacts from Grassy Island: Groups B and C.

basis for the above statement, and also exhibits a marked difference between the two more recent sites.

About two-fifths of the arrow-heads were made of quartz. The most predominant other material was an attractive looking fine-grained green shale which weathers into a light gray, of which one-fourth of them were made. Rhyolite of various colors and veinings or bandings comes next in frequency of use, comprising one-sixth of all; and the remaining one-sixth includes sandstone, quartzite, felsite and occasional specimens of other kinds. According to Charles W. Brown, Professor of Geology in Brown University, some of these must have come from a considerable distance, as, for instance, from Attleborough, the Boston basin, Marblehead; but in some cases these may have been brought to the neighborhood in the glacial drift, instead of having been obtained in the regions of their natural occurrence.

Among the chipped objects there are fifteen which I take to be perforators or the bases of perforators with their points broken off; and seven of these are shown in the lowest row of Group B. About forty other chipped objects were found that did not seem to be projectiles or perforators, and may have been unfinished pieces, knives or scraping tools. The best worked of these are shown in Group E, first row, nos. 1 and 5, second row at end, and in Group B, second row, no. 7. The latter was found six inches below the ancient surface. At least a dozen cores from which flakes had been detached for fashioning chipped objects are among the specimens collected.

The most striking feature of all other classes of artefacts from this site is the extremely crude character of almost all of them; although it must be remembered that the specimens thus far discovered may not be fully typical of the entire culture. With few exceptions they are natural unshaped pebbles showing marks of use, or are very roughly and imperfectly shaped. Only two specimens are grooved: one of them a sandstone "sinker," shown in Group C (second row, no. 3), carefully shaped and with shallow groove all around its longer axis; the other a blunt axe or hammer (C, second row, no. 4), double-edged, symmetrical except that one corner is broken off, very lightly grooved or roughened all around

the middle. Five specimens are notched for hafting, sometimes fairly well (C, second row no. 2, third row no. 2), sometimes very crudely (C, first row, nos. 1, 3). Besides the sinker and well-notched adze, the few pieces which show particular care and skill in workmanship include the following: a gouge (C, first row, no. 2), found standing upright just below the ancient level, with edge smoothly ground and slightly broken, measuring $4 \frac{5}{8}$ by $1 \frac{5}{8}$ inches, and $\frac{7}{8}$ inch greatest thickness; a blunt celt or pestle (D, first row, no. 2), $6\frac{1}{4}$ by $2\frac{1}{2}$ inches, $1\frac{1}{2}$ inch thick, of gabbro diorite, remarkably well shaped; a hand-hammer or pestle (same row, no. 1), 5 by 3 by $2\frac{1}{2}$, carefully worked into shape; an axe or spade (E, first row, no. 4), $4\frac{1}{2}$ by 3 by 1, tapering in thickness towards both ends; another piece, possibly hoe or spade (same row, no. 3), 5 by 4 by $\frac{1}{2}$ tapering to a thin edge; and a small fragment of a very thin tablet (the smaller piece in E, second row, no. 3), of slate, carefully shaped to a uniform thickness of 4 or 5 millimeters, with delicately rounded edge and tool-marks on edge and body. Next to the last named object is another flat fragment worked on only one side, with a rounded edge. Not more than two or three other pieces besides those just described show a deliberate attempt to modify the natural shape, except sometimes to a very slight degree.

A great many stones, however, show marks of use due to striking or rubbing operations. Among them are a number that seem to be hand-hammers (D, first row, no. 3, second row, nos. 1, 3); some roughly edged tools (axe or adze, E, first row no. 2, second row no. 1); a fragment of a flattened pestle (D, second row, no. 2). Surfaces made smooth and flat by rubbing or grinding processes appear in a considerable number of stones including those shown in Groups C (second row no. 1, third row nos. 1, 3) and E (second row no. 2). Of objects that I have thought might be classed as hammers I have found 19 in all; of axes or adzes 6 or 7; and of what may have been hoes, spades, or possibly cutting tools for other purposes, 5. These latter much resemble the thin blades of which I have found many specimens among the corn-fields of the later Indians and which I take to be hoes; and they may, therefore, indicate that these earlier natives were



PLATE III
Artifacts from Grassy Island: Groups D and E.

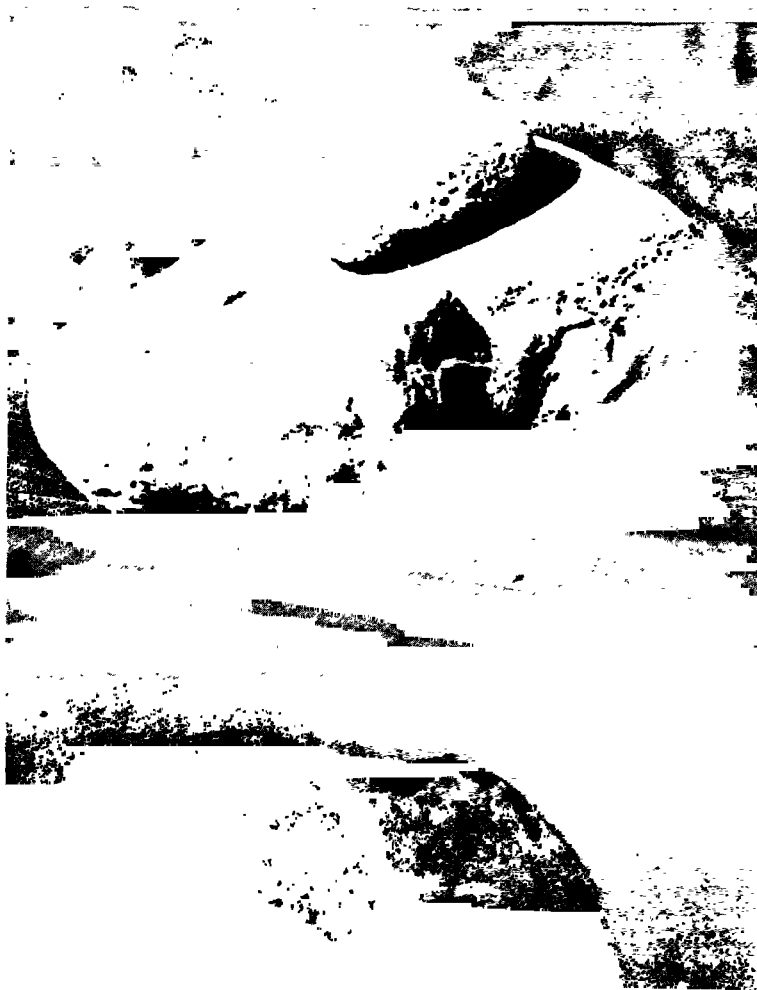


PLATE IV
Mortars and Grinding Stones from Grassy Island.

already acquainted with agriculture. One of them was discovered lying flat two inches below the ancient level.

Of especial interest are the mortar and grinding-stone or muller of Plate IV. The mortar or metate is of sandstone, about $9\frac{1}{2}$ by 11 inches on its upper surface, 6 inches thick at its highest corner and 2 to 3 at its lower end. It constitutes a sloping, not a hollow, grinding surface, one part of which rises at an abrupt angle to a higher level than the other. The muller is of coarse gritty sandstone, 4 by $3\frac{1}{2}$ by $1\frac{3}{4}$ inches. It was found a hundred feet away from the mortar, but the manner in which it is worn leaves practically no doubt that it was used with the latter. It will be noticed that it has one side worn at a particular angle. When it is turned over, the flat face turned uppermost in the illustration exactly fits the bed of the mortar, and the worn edge exactly fits the abrupt upward slope which divides the mortar into two portions lengthwise, showing that it must have been rubbed back and forth repeatedly in that position. A second mortar was found of about the same size, but with a very shallow hollow on its upper surface.

The object shown in Group C, row two, at right-hand end, is a lump of pure graphite weighing an ounce and a half. The nearest places at which this may have been gathered are Mansfield, Mass., and Cranston, Cumberland, and Tiverton, R. I. A few minute fragments of red ochre have also been detected at various scattered places during the excavations.

The gouge is stained on one edge with sulphate of iron, and Mr. Willoughby tells me that he believes that this is due to its having once lain close to a firestone of iron pyrites in a grave. No other signs of graves have been discovered on this site. Of one broken arrow-head, not illustrated here, Professor Brown remarks: "Heating has destroyed the possibility of recognition of the variety of stone. It seems to have been cracked and charred by fire." In one place, near which were found the graphite, some ochre particles, the gouge and mortars and numerous other objects, I uncovered what I thought may have been a pavement or hearth of stones laid compactly together, measuring about two by four feet. These indications of the use of fire give some slight support

to the evidence offered by the considerable variety of objects and the domestic character of some of them, that this site was actually dwelt upon at a time when its level stood high enough to be beyond the reach of the tides. At one time I thought that certain deep holes in the soil filled with decayed organic material were evidence of ancient stake-holes, but I do not now believe them to have had any connection with human activities.

The chief value of these observations is that they give some clue to the length of time during which New England has been inhabited. It is not very definite, and sets only a minimum limit at best, but so far as I know it is the only indication yet reported. This surface now lies under six feet of water at highest tides, and must have been at least two or three feet above them if it ever was the site of an encampment. In such case there must have been a subsidence of the land of at least nine feet since it was occupied by human beings as a dwelling-place. It is well known that north of Maine the land has risen since it was relieved of the weight of glacial ice; and there are many who believe that there has been a compensatory subsidence to the southward. The rate at which it occurred is still uncertain, and there is difference of opinion as to whether it still continues. Charles A. Davis,⁴ who studied the salt-marsh formations near Boston, estimates that the rate of downward movement is the same as that at which the peat growths are built up,⁵ and remarks that this "has not yet been determined, but is probably slow, perhaps less than a foot in a century." One observation of my own is pertinent. In front of a house on Assonet River, that was built early in the nineteenth century, I cleaned out a 12 to 15 inch deposit of peat from the beach, and found underneath it numerous fragments of old-fashioned crockery and glass that must have been thrown there

⁴ *Economic Geology*, 1910, vol. 5, p. 623.

⁵ These grasses can grow only within certain limits of depth of tidal waters. If a coast-line is sinking too rapidly, the water deepens too fast and peat will not form. Where the latter occurs, therefore, the rate of subsidence cannot have been greater than the rate at which peat can grow; and the argument of this paper, that a certain time at least must have elapsed since the surface was habitable, will hold. If the rate was slower, this time would be longer.

by the early occupants of the house while the beach was bare.⁶ This would indicate a peat-growth of perhaps a foot per century, as nearly as can be estimated, which agrees fairly well with the suggestion made by Davis. This is probably, therefore, fairly near to the maximum rate at which subsidence in this vicinity can have taken place, but it does not determine whether it is still going on. Douglas W. Johnson,⁷ reviewing evidence bearing upon the matter, comes to the conclusion that there has been no recent subsidence of the coast. The downward movement if it occurred at all ceased some time ago. In the vicinity of Assonet Neck this seems to be true, for the location and acreage of the neighboring salt-meadows was described nearly three hundred years ago, and so far as I can judge by careful estimates there seems to have been no change. Unfortunately none of these data are very exact, and thus we have as yet no sure knowledge as to when the movement of subsidence ceased, or at what rate it had been previously going on. One possibility, however, is that there has been no subsidence since 1600 at least, since the meadows do not seem to have changed since then, and that, if previous movement was at the average rate of about one foot in a century, the habitable character of the ancient level of Grassy Island on and beneath which these relics lie ceased some nine hundred years before that date.

This estimate, it must be acknowledged, will not be accepted by all of the best authorities. John R. Freeman, for example, believes that bench marks and other data in the vicinity of Boston afford conclusive proof that subsidence is still in progress at the rate of about a foot per hundred years.⁸ If this be a correct interpretation of the facts, then the minimum time of our calculations would be somewhat shortened. On the other hand, Johnson argues that all of the supposed proofs of land sinking within historic

⁶ The beach was bare at first, I assume, because the current naturally sweeps strongly against the shore at this place; but a wharf was built at one end of this beach, probably not far from the year 1800, and a division wall of large boulders at the other end, thus producing conditions favorable for the growth of the grass.

⁷ *Scientific American Suppl.*, No. 2168, July 21, 1917; and *Geogr. Rev.*, 1917, iii. 135.

⁸ Report of the Committee on Charles River Dam, 1903, pp. 529ff.

times are open to criticism and may be given alternative explanations, whereas the physiographic evidence can be explained only by postulating long-continued coastal stability. Professor Brown suggests to me that, if he is right, our site may have been a winter encampment on the surface of the frozen marshes, and that the stone artefacts left there gradually sank down through the peat to their present level. It seems far from likely that any people would have chosen to encamp, especially for as long a time as is indicated by the number and variety of our specimens, on a position so exposed to wintry blasts, when there are sheltered valleys close by, and from which they would have had to go some distance for their fuel and drinking-water, unless they used blubber and melted ice for these purposes. It seems impossible, moreover, that they could have occupied for long-continued dwelling a position that is only a small island whose surface is submerged sometimes under three or four feet of water when tides rise to their extreme height. However, even if this possibility represents the correct opinion, it must have taken a very long time for all of the stones to sink down through the peat, and we should still be justified in assuming an ancient date for the occasion of residence there. Another suggestion by Professor Brown, that there may have been slipping clays underneath our implement-bearing stratum, whose displacement submerged the original level of the latter and permitted a growth of peat above it, again avoids the hypothesis of a general coastal subsidence but seems to involve our original estimates of antiquity, based upon a probable rate of peat-growth whose formation was complete, as we know, as early as 1640.

Leaving the geologists, as we must, to settle this question as to subsidence or stability themselves, we may conclude that the discoveries at Grassy Island, taken by themselves alone, are at least most easily accounted for on the assumption that there were Indian tribes living in New England at a time when the soil level underneath the peat of this island was at least nine feet higher than it is now, and that this cannot have been later, and may have been an indefinite time earlier, than about a thousand years ago. If Abner Morse's "hearths" were also due to human agency,

the habitat of these people extended at least as far as Cape Cod. So far as can be judged by the specimens of their handiwork already gathered, there is no evidence of any particular relation of their culture to that of the Red Paint people. They seem to have been expert in the manufacture of chipped objects, took pains also sometimes, at least, in shaping gouges, sinkers, pestles, hoe-like implements, and possibly tablets, but contented themselves with the crudest kind of other tools. These latter were used for various cutting, pounding, rubbing and grinding purposes, and were naturally shaped stones with a minimum of retouching, and, when necessary for hafting, with roughly made notches or rare and exceedingly shallow grooves. We know nothing further about them except that they made use of fire and of both red and black paint, and probably engaged in agricultural operations.⁹

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⁹ Since this paper was written a few further objects have been found, including two broken pieces of long spear-heads, a small fragment of a second gouge, and a curved fragment that looks as if it might have been part of the bottom and side of a stone pot.

DEBTOR AND CHATTEL SLAVERY IN ABORIGINAL NORTH AMERICA

By WILLIAM CHRISTIE MACLEOD

THE facts as to debtor slavery and chattel slavery in aboriginal North America are of considerable interest to economic history, yet they have been somewhat slighted. A survey of the data will no doubt be of interest and value.

DEBTOR SLAVERY

Le Jeune, in 1639,¹ wrote of the gambling of the Algonkian met by him in the region of Quebec:

I have seen a savage woman who, having lost all she had, staked herself—not her honor, but indeed her services—that is to say, she would have been a slave or servant of the winner if she had lost. They say that it sometimes happens that when men or women stake themselves, he who wins them keeps them one or two years and employs them in fishing, hunting or in minor household duties; then he gives them their liberty. The savages *may not exercise severity, nor harshly exact a service from their countrymen.*

Lescarbot,² concerning the gambling of the Micmac specifically, wrote that men sometimes staked their wives, but at the cost of their self-respect, for:

True it is, as to women lost at play, that to hand them over is full hard, for often they make mock of the gambler, and point the finger of scorn at him.

Roger Williams, speaking of the gambling of the Narragansetts and their neighbors³ affords an interesting additional note on New England gambling:

¹ The Jesuit Relations, v. 16, p. 201. (The italics in this paper are my own.)

² M. C. Lescarbot: History of New France, (Biggar, H. P., ed.), 1907, v. 3, p. 197.

³ R. Williams: A Key to the Language of America, Proceedings of the Rhode Island Historical Society, v. 1, 1827, p. 146. In this doggerel verse the author moralises (p. 147) to the effect that "Our English gamesters scorn to stake, Their clothes, as Indians do, Nor yet themselves, alas, yet both, Stake souls, and lose them too."

J. Carver, Travels, (1766), 3rd. ed., 1838, p. 228, observes of the gambling of the natives of the western Great Lakes region that they gamble away "sometimes even their liberty."

When they have staked and lost their money, clothes, house, corn, and themselves (*if single persons*), they will confess [to the evil of gambling], ready to make away with themselves, being weary of their lives.

Choctaw⁴ practices were similar to those of New England:

When they are very much excited they wager all they have, and when they have lost all, they wager their wives for a certain time, and after that wager themselves *for a limited time*.

Of the Carolina tribes Lawson wrote, describing their gambling at intertribal festivals and markets,⁵ that:

they game very much, and often strip one another of all they have in the world, and, what is more, I have known several of them to play themselves away so that they remained the winners' servants *till their relatives or themselves could pay the money to redeem them*.

So much we are able to gather concerning debtor slavery arising from gambling. Of the servitude of thieves Lawson writes⁶ for the Carolinas, that the natives had:

no fence to part one another's lots in their corn fields, but every man knows his own, and it scarce ever happens that they rob one another of so much as an ear of corn, which, if any is found to do, he is sentenced by the elders to work and plant for him that was robbed, till he is recompensed for all the damage he has suffered in his corn field . . .

Concerning indebtedness incurred in ordinary commercial transactions Lawson notes certain peculiar practices. He states that if a man dies in debt his widow is not required to pay anything of the debts, unless she is willing. This is not surprising, inasmuch as the wife presumably did not have any share in her husband's property interests. But strangely enough this freedom from obligation lasts only so long as the widow does not remarry, for "whosoever takes her to wife pays all her husband's obligations, though ever so many"; and if a man merely "court her for a night's lodging and obtain it, the creditors will make him pay her

⁴ J. R. Swanton (*ed.*): *An Early Account of the Choctaw Indians*, (?1715), *Memoirs of the American Anthropological Association*, v. 5, 1918, p. 68.

⁵ J. Lawson: *History of Carolina*, 1714, p. 287. Lawson also notes that "They never differ at gaming, neither did I ever see a dispute about the legality thereof ever so much as arise among them."

⁶ Lawson, p. 292. On page 329 he observes of thieves that "they are slaves until they repay the person."

husband's debts." Peculiarly, furthermore, if a man takes a widow thus laden with her husband's debts, she seems to have some of the attributes of a chattel, although also a wife. Her husband may,

"if he will, take her for his money paid to her deceased husband's creditors, and sell her to another for his wife. I have seen several of these bargains driven in a day, for you may see men selling their wives as men do horses at a fair, a man being allowed not only to change as often as he pleases but likewise to have as many wives as he is able to maintain."⁷

For the coastal regions of Washington and Oregon—Puget Sound and the Columbia River, etc.—Gibbs writes:

If one Indian has wronged another, and failed to make compensation, or if a debtor is insolvent, he may be taken as a slave. Their mode of procedure is characterized by their wonted deliberation. The plaintiff comes with a party to demand satisfaction, and holds out to the other the option of payment or servitude. If no satisfaction is given he must submit, unless he is strong enough to do battle. And this slavery is final degradation. The rule of once a slave always a slave extends so far that if the debtor should have given up some relative in his power, and subsequently redeems him, he becomes his slave in turn. If a man purchase his father or mother they become his slaves and are treated as such. . . . Even if one purchase his [own] freedom he is yet looked upon as an inferior.⁸

Parker for the same region⁹ noted that persons are made slaves when "taken in payment of debts, if they are orphans of the debtor"; and that persons "sell themselves in pledges." While for this region Swan wrote¹⁰ concerning gambling that:

⁷ Lawson, p. 114. For New England, on commercial debts, we have only the note of Williams (*op. cit.*, p. 45) that "it is common for a brother to pay the debt of a brother deceased." P. Jones: *History of the Ojibway*, 1861, p. 109, notes concerning liability for payment of blood money, that this falls on the murderer and his relatives, and that the amounts are usually such that these persons may have to labor for years in order to pay up. Equivocally enough, he notes concerning the murderer himself, that "This is, in fact, a sort of servitude, for the murderer is not his own, having to exert himself until the injured parties are satisfied."

⁸ G. Gibbs: *Tribes of Western Washington and Northwestern Oregon*, (Smithsonian Contributions, 1877), p. 188.

⁹ S. Parker: *Journal*, 1846, p. 156.

¹⁰ J. G. Swan: *The Northwest Coast*, 1869, p. 156. H. J. Spinden: *The Nez Percé Indians*. (Memoirs of the American Museum of Natural History, v. 2), says of the Nez Percé of the adjacent plateau that "it is said that women could gamble away their freedom, but men were not allowed to do this."

There was apparently method in the madness of the Indian gambler. Father De Smet wrote for the "Flatheads" or the Indians of the plateau generally, in the

I have known them to sell themselves as slaves *for a term of years*, or till another chance enables them to pay up their debts.

A note by Kroeber on the area embracing northwestern California and southwestern Oregon makes clear the fact that in this region at least a debtor may be made a chattel slave; and makes clear our other references to debtor slaves redeeming themselves. Kroeber writes:

Slavery occurred in northwestern California as a result of any unpaid debt. It did not matter whether an obligation were wilfully incurred or not, since the law of the region consistently ignored intent. I remember a case of a man who in firing brush had burnt up secreted property of another man, and being poor was unable to effect compensation except by going into slavery. He *was later given in part payment of a blood settlement*. This was after the whites came, but in order to free himself of any claim or vengeance from his master he arranged to free himself by turning over to the latter his wages received from working for a white man for a specified period.¹¹

Under the category "debtor slavery" we have now offered instances of servitude resulting from the staking of the person of oneself, one's wife, or one's dependents, in gambling; the selling of oneself for a lump sum of money; the pledging of the person of oneself or of one's dependents as security for a debt incurred through the ordinary commercial transactions, or incurred as a consequence of theft or of injury, intentional or unintentional, to another's person or property. Debtor slavery arising from one source or another appears as widely distributed throughout both agricultural and non-agricultural, stone age,

region of the upper Columbia, that in gambling. "After losing their goods, they would stake their own persons; at first playing for one hand, then for the other, and if the game continued unfavorable to them, they played successively for every one of their limbs, and lastly for their head, which, if they lost, *they, together with their wives and children, became slaves for life*." (Journey, in v. 27, p. 171, of Thwaite's Western Travels.)

¹¹ See A. L. Kroeber: Handbook of the Indians of California, (Bulletin 78 of the Bureau of American Ethnology, 1925). The above is quoted from a letter to the writer by Dr. Kroeber. H. H. Bancroft: Native Races of the Pacific States, v. 1, p. 253, refers to men staking their wives, in gambling, in northwestern California. In northwestern California furthermore we have the practice of making illegitimate children,—that is, those born of parents whose marriage has not been sanctioned by the exchange of a bride-price and its equivalent dowry,—lifelong slaves of some male relative of the mother.

North America; no doubt further intensive research would make it appear more widely distributed than it is possible at present to indicate. Curiously enough, we may here note, that, while debtor slavery resulting from the pledging of the person obtains on Puget Sound and southward including northwestern California, there is no note of it for the peoples of the North Pacific Coast north of Puget Sound. Yet these northern tribes had the passion for gambling pertaining to all Indians, and were quite as mercenary as their southerly neighbors. Moreover, for the important Kwakiutl group we have abundant data on the pledging of things other than the person in commercial transactions. It may be that the better social integration of the northern coast tribes, and the development of the potlatch, with its public exhibition of the shame of the poor and the indebted, affording psychological compensation to the creditor, may have inhibited the development or diffusion of debtor servitude; on the other hand it is possible that debtor slavery obtained but has not been noted in our accounts of the life of the northern tribes.¹²

¹² One Tsimshian tale would indicate that a man might stake his wife and children in gambling. See Boas, F.: *Tsimshian Mythology* (1910-1911, 35th Annual Report of the Bureau of American Ethnology). But Curtis writes for the Kwakiutl that when a debtor could not pay up he kept borrowing from the creditor to meet the interest on his debt interminably; of course, as the debt increased the debtor's shame increased, while the creditor is given, in the potlatch, credit for his outstanding credits and is able to use them by transferring them in the purchase of a copper through the operation of a primitive sort of clearing house. (See Curtis: *The North American Indian*, v. 10, 1910; W. C. MacLeod: *A Primitive Clearing House*; *American Economic Review*, Sept., 1925 (in press).) But these notes were made after the Europeans had abolished forced servitude in Canada; however, Dawson (*The Queen Charlotte Islands*, 1879 Report of Progress, Geological Survey of Canada, p. 129) describes Haida gambling without note of gambling away of the person, and elsewhere describes Haida chattel slavery. We may have in the following a reminiscence of debtor slavery among the Kwakiutl. Boas writes that the pawning of one's name is called *qaqaoxc*—"selling a slave." Curtis says that when a man wished to pawn the name of his daughter he says to the prospective lender, "I wish you to take hold of the foot of my daughter," or "I wish you to buy my daughter to be a slave." (See Curtis. *op. cit.*, p. 144; and Boas, F.: *Secret Societies of the Kwakiutl*, U.S. National Museum, Annual Report, 1895, p. 346.) Among the Tsimshian a person might be enslaved, or condemned to death by sorcery, for sacrilege during the winter ceremonials. (F. Boas: *First General Report*, British Association for the Advancement of Science, 1889, p. 832.)

CHATTEL SLAVERY

Hereditary chattel slavery was a conspicuous trait of the culture of the non-agricultural North Pacific coast where it has been noted for a continuous area from the Aleutian Islands to northwestern California, inclusive. An active intertribal slave trade was carried on. On the margins of this area—on the adjacent plateau, tundra, and desert, and in the mountain valleys of California—the institution becomes merely the non-hereditary enslavement of prisoners of war.¹³ The proportion of slaves to the total population has been variously estimated at from one-twentieth to one-third, varying, apparently, with the conditions of life of the villages along the coast; the proportion decreased under the influence of European culture, and slavery disappeared altogether with Canadian and American prohibition.¹⁴

In agricultural America slavery was not hereditary. Slaves were merely captive men, women, and children who were either waiting adoption or were not adopted. Of the Choctaw¹⁵ we read:

When they capture any young people, girls, women, or young boys, alive, they carry them to their villages and make slaves of them. There are nations which adopt them as dogs; they make them perform all the functions of a dog, guard the doors, growl when anyone enters or goes out, eat the leavings of the dishes, and gnaw the bones.

Bartram noted the abjectness of the slaves of the Creek, neighbors of the Choctaw:

In observing these slaves we behold at once in their countenance and manners the striking contrast betwixt a state of freedom and slavery. They are the tamest, the most abject creatures, that we can possibly imagine; mild,

¹³ H. J. Nieboer: *Slavery As An Industrial System*, The Hague, 1900, has some worth-while discussion of the slavery of this area. My observations are based on a particular study of the slavery of the North Pacific which I am presenting elsewhere, separately. At present it is difficult to exactly delimit the area of hereditary slavery.

¹⁴ One-twentieth in John Work's census for the Kwakiutl. (See Curtis, *op. cit.*, v. 10, p. 303.) Gibbs, *op. cit.*, p. 188, says that it was about one-tenth on the Sound and the Columbia, but was larger north of the Sound. Simpson, G.: *Narrative*, 1841, p. 125, for the Tsimshian region particularly, estimated one-third as the proportion.

¹⁵ Swanton: *Early Account*, (?1715), p. 63. Lawson, *op. cit.*, p. 327, notes that in the Carolinas the term for slave means "that which is obsequiously to depend on the master for subsistence," and is applied alike to pets, domestic animals, and slaves, generically.

peaceable, and tractable; they seem to have no power or will to act but as directed by their masters; whilst the free Indians on the contrary, are bold, active, and clamorous. They differ as widely from each other as the bull from the ox.

In describing the *miko* or village civil chief of the Cuscowilla Lower Creek or Seminoles, Bartram describes the chief's retinue:

He has been a great warrior, having then attending on him as slaves many Yamasee captives taken by him when young. . . . They were dressed better than he, served and waited on him with signs of the most abject fear.

Of the non-hereditary character of Creek slavery Bartram observes:

The slaves, both male and female, are permitted to marry amongst them. Their children are free, and considered in every respect equal to themselves but the parents continue in a state of slavery as long as they live.¹⁶

The male slaves referred to no doubt included some boy captives matured. But, clearly, among the southern tribes as among the Iroquois far to the north, among whom agriculture was of somewhat less importance, male captives were sometimes enslaved rather than adopted or burnt, and used in field work. That these male adults might not run away, sometimes the Iroquois, as did the southern Indians, would mutilate the feet of these slaves, impeding their movement and making their footsteps identifiable.¹⁷

Descriptions of Iroquois life further illustrate, probably not only Iroquoian slavery, but that of the Eastern Woodlands in general.¹⁸ Among the Iroquois, captives were sometimes burnt in

¹⁶ W. Bartram, *Travels*, 1791, pp. 181, 185-186, 213.

¹⁷ For a 1540 account of the crippling of slaves by cutting either the tendons of one foot or one heel see Garcilasso's *La Florida*, Dec. 1, lib. 3, cap. 17; Dec. 2, lib. 1, cap. 11, and lib. 2, cap. 7, lib. 3, cap. 4; in B. Shipp's translation; *De Soto and the Conquest of Florida*, 1891. This mutilating was apparently general in the southeast, and in time no doubt spread northward. Lawson (*op. cit.*, pp. 53, 93) notes that the Carolina Indians likewise, for the same purpose, "first raise the skin, then cut away half the feet, and so wrap the skin over the stumps and make a present cure of the wounds." He describes a Carolina Indian who had been a captive among the Senecas but had escaped; the Senecas "had cut his toes and half his feet away, which is a practice among them." Of the Chinook of the far away North Pacific Coast, Curtis (*op. cit.*, v. 8, p. 89) notes that "a slave much given to running away was cut on the bottom of his feet so as to make travelling difficult."

¹⁸ The French travelers and missionaries very frequently use "slave" and "prisoner" synonymously because a captive was in fact a slave pending possible burning or adoption.

sacrifice; sometimes adopted as members in full standing of Iroquois families. But frequently they were merely made slaves of the living, or slain with a view to sending them to the other world to be slaves of some deceased member of the family into whose possession they had come. Slavery was not hereditary. La Hontan notes:

Upon the death of a savage his slaves marry the other women slaves and live by themselves in a distinct hut, as being then free, or such as have no master to serve. The children who spring from these marriages are adopted or reputed the children of the nation by reason of their being born in the village or the country. "There is no reason," say they, "that such children should bear the misfortunes of their parents, or come into the world in slavery, since they contributed nothing towards their creation." These slaves take great care to go every day to the foot of their master's coffin, and there offer up some pipes and tobacco as a grateful acknowledgment of their liberty.¹⁹

Of mortuary killing of slaves, La Hontan notes that male prisoners²⁰ are, by the council of elders, "commonly presented to such married women or maids as have lost relatives in the expedition, and to those who want slaves."

Now, if the woman to whom the present is made means that the poor wretch should die, she gives him to understand that her father, her brother, her husband, etc., having no slaves to serve them in the country of the dead, it behooves him to take a journey thither out of hand.²¹

¹⁹ La Hontan: *New Voyages* (1705), Thwaite's Edition, Chapter on Manners and Customs, in vol. 2. Compare *The Jesuit Relations*, v. 43, p. 293 (1656), where we read of slaves "who have become heads of families after the death of their masters, or have married. Although they lead a tolerably easy life they are looked upon as slaves, and have no voice, either active or passive, in the public councils."

²⁰ Female prisoners "are distributed among the men, who are sure to grant them their lives." (La Hontan, v. 2, p. 505.) Cf. *The Jesuit Relations*, v. 43, pp. 293, 299, 303, where it is stated that until someone will care to marry them, women prisoners are slaves who are very harshly treated and liable to be killed on the slightest will of their owner, master or mistress.

²¹ La Hontan, v. 2, p. 505. Supported also in this by *The Jesuit Relations*, v. 54, pp. 93-95 (1669), where we read of the Jesuit father who baptised a young woman "of the more influential class" of the Senecas, which woman shortly after died. Despite the protests of the priest the young woman's mother argued for a mortuary killing: "Thou dost not understand. She was a mistress here, and had at her command more than twenty slaves who are still with her. She never knew what it was to go to the forest to bring wood, or to the river to draw water. She knew nothing about house keeping." The mother insisted that the priest baptise a sick slave ("one of my slaves") and instruct it how to find the road to the Christian paradise whence the girl had gone, and to serve her there, because the girl would be alone of her family in the Christian paradise.

Slaves were used among the Iroquois not only in agricultural labor, but for gathering firewood—a laborious duty—and drawing water; and used not only in the villages, but as menials, and even as hunters with hunting parties.²² Foot mutilation, where it was used, would tend to prevent running away from a hunting party; and another factor which tended to prevent running away arose from the fact that as soon as any warriors were taken prisoner:

their relatives, and the whole nation to which they retain, look upon them as dead; unless it be that they were so much wounded when they were taken that they could not possibly kill themselves. These indeed they receive when they make their escape; but if the other prisoners should offer to return, they would be condemned by their relatives, and nobody would receive them.²³

This non-hereditary enslavement of captives, with occasional mortuary immolation of slaves, existed westward of the Mississippi, and appears to be linked, in distribution, with the non-hereditary slavery of the western plateau.²⁴

CONCLUDING NOTE

Debtor slavery in one form or another, and chattel slavery, have been shown to have a very wide distribution in aboriginal North America. Further investigations no doubt will show them

²² In Lawson, *op. cit.*, for the Carolinas, we have note of a slave being used as a carrier by his master while engaged in intertribal peddling (the case of the Waxaw on his way to the Congaree and Shawnee); and note of a slave doing the hunting for his master when on a journey (the case of the chief of the Eno). Strachey notes that the Virginia village chief, Eyanaco, kept seven members of the broken Roanoke Colony to beat copper for him, which recalls the use of Jewitt by Maquinna, the Nootka head chief, as armorer. (See MacLeod *The Origins of the State*, Philadelphia, 1924.)

²³ La Hontan, v. 2, p. 506. Compare Dawson, *op. cit.*, p. 497, on the Haida: "Slaves sometimes regain their freedom by running away, but should they return to their native place, they are generally so much despised that their lives are rendered miserable." In the *Jesuit Relations*, v. 43, p. 293 (1656) we read that some Iroquois slaves are those who "have fallen into slavery after being the richest and the most esteemed in their own villages, and who receive no other reward from their masters in exchange for the ceaseless labor and sweat than food and shelter"; perhaps unredeemed by their own tribesmen because of cowardice in having been taken alive.

²⁴ See, for example, Jones *History of the Ojibway*, 1861, p. 131; L. de Cessac: *Renseignements ethnographiques sur les Comanches*. (*Revue d'ethnographie*, v. 1), pp. 115-116; Bancroft, *op. cit.*, v. 1, pp. 436, 433, 500, 510; Schoolcraft: *History of the Indian Tribes*, 1851, v. 1, pp. 232-235; v. 5, p. 210.

to have been even more widely diffused—even universal, perhaps. At present, however, it would seem that such were definitely absent at least among the central and eastern Eskimo, and among the peoples of central California and the adjacent Southwest. Hereditary slavery was very clearly confined to the coast of the North Pacific; it would seem that the area of non-hereditary slavery surrounding this stretch of hereditary slavery is a part of the single, great area of North American non-hereditary slavery.

Our notes on distribution and type suggest the possibility that the hereditary slavery of the North Pacific Coast developed as a result of diffusion from Asia; in such case one might consider the non-hereditary slavery of the greater part of the remainder of North America as a weaker reflection of the same influence. The writer sees *no economic or political reason for the non-existence of hereditary slavery in the agricultural southeast of North America*, considering its existence among the northwestern hunters and fishers. Yet it may be indeed that the hereditary slavery of the Northwest grew up as a further development of the non-hereditary slavery which no doubt originally obtained there as in the rest of North America. We may conceive of the non-hereditary slavery as having arisen through the desire and opportunity of families who had lost bread-winners in war to recoup their labor force by using prisoners—and yet being unwilling to adopt them, at least without a probationary period—which period would tend to become indefinitely long. Psychological changes, involving a tendency to despise the children of those who have lived as slaves, coupled with the development of an active intertribal trade—this latter apparently being especially highly developed among the innumerable fjords and islands of the further North Pacific coast—might be considered as making for the non-adoption of slaves' children, with their ownership by the owners of their parents. The *psychological* development here involved would not necessarily follow on the development of marked social stratification among the freemen, alone, for this social stratification is equally marked in both the northwest and the southeast of North America.

We note, too, that debtor servitude and chattel slavery represent *two distinct lines of institutional evolution*, although both come eventually to be more or less closely woven together in the cultural complex.²⁵ Possibly one or the other type of involuntary servitude got a start first and set the example which gave cause to the initiation and development of the other. The known distribution in North America of the two types does not warrant any conclusion as to the priority of one or the other.

Finally, we may add that when the actual facts of aboriginal American land tenure are considered in connection with the actualities of aboriginal American slavery they disprove once and for all the widely accepted thesis which Nieboer vainly attempted to prove, that slavery can only evolve where there is an abundance of "free land"; for in aboriginal America, most certainly on the Northwest Coast, all land was held as property and there was no landed property that was not, the state of the arts considered, effectively utilised economically.²⁶

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²⁵ Apparently only on the northwestern coasts of the United States might a debtor be made a chattel slave, whose condition would be hereditary.

²⁶ Compare my note entitled *Superest Ager*, in *The Quarterly Journal of Economics*, May, 1925.

BURIALS IN THE MAYA AREA

BY O. RICKETSON

TO DATE, the archaeological work carried out in the Maya area has been of a more or less sporadic nature. A good deal of exploration has been done and a great many sites have been reported; but exhaustive examination of any one important site is the hope of the future. If these statements are true for the whole field, they may be reiterated with emphasis for the burials.

In examining the literature on Maya burials the most prominent factor is the paucity of material; the second is the great unevenness of the work reported. In one case a writer states that he has entered and examined over one hundred chultuns, of which he found many that had been utilized as burial chambers or as ossuaries; yet in his report only thirty-four chultuns are described, the article concluding with the remark that to "enumerate or attempt to describe the subterranean chambers which furnished no data would only serve to fill up the report with useless matter." It is to be regretted that a brief summary, giving exact numbers, could not have been appended, for it would enable us to state definitely that a given per cent of chultuns were used as burial places in this case. On the other hand, the work of Dr. Gann leaves little to be desired, and he has probably opened more mounds than any other man alive today.

We cannot yet classify Maya burials according to position nor frequency of occurrence in any given area, but we can itemize the various kinds employed. A civilization as highly organized as the one we find in the Maya area must have developed a caste system, and determination of caste distinctions in burials would be a great stride towards a better understanding of the whole culture. At present we can cite almost any type of burial desired, from simple inhumation to burial in complicated vaults, not excluding cremation preceding urn-burial. Our earliest authority, who, unfortunately, writes all too briefly on the subject, does imply that the method of burial was a matter depending on the social position of the deceased.

This authority is Bishop Landa,¹ who writes of contemporaneous customs. On the psychological side, he tells us that the Maya entertained a great fear of death, and that the sole purpose of all their rites was to beg their gods to grant them health, life, and daily bread. The dead were mourned long and bitterly, and it was believed that the deceased had been carried off by an evil spirit. As to the actual burial itself, he states that the mouth of the of the dead person was filled with corn² and small stones, the latter to serve as money in the life hereafter. The grave was usually dug beneath the floor of the house, in which case the house was abandoned,³ or in the yard outside. Pottery idols were placed in the grave, and if the deceased were a priest, his books. It may well be that the grave-objects were characteristic of the rank and occupation of their erstwhile owner; the hot, humid climate, however, has, so far as archaeological work reveals, destroyed every article except the most lasting.

Landa states, further, that people of high rank—this statement alone intimates another, *lower* class—were cremated and the ashes placed in urns. The ‘princes’ were cremated, but their ashes were preserved in hollow statues of baked clay. As opposed to these two classes, ‘rich people’ made statues of wood with hollowed heads for their parents. Part of the body was then burnt, the ashes were deposited in the hollowed head, and the latter sealed. The head of the deceased was skinned and stretched over the wood. Those parts of the body left after these operations were then buried,⁴ while the statues were preserved with veneration among their idols.

A like custom existed among the Cocom princes,⁵ differing only in detail. The deceased’s head was cut off, boiled, and cleaned. It was then sawed in half laterally, the front (facial) half being covered with gum modelled to resemble closely the

¹ Landa. 1864. Chap. xxxiii, p. 195.

² Called “koyem” according to Landa.

³ Gann. 1918. p. 85.

Guthe, 1922. p. 318, says of a burial. “No furniture, no trace of a skull, teeth, or of the atlas and axis could be found.”

⁵ Rulers of Mayapan until the middle of the 15th century.

expression of the man during life. These masks were preserved along with the ash-statues in the 'chapels in their houses.'

It may not be strictly relevant to the title of this paper to insert the religious beliefs of the Maya as Landa records them; but they are given briefly enough and consisted of ideas not unlike our own—a belief in the immortality of the soul and of a life after death. Their Paradise they called Yaxche, "The Green Tree," and their Hell, Mitnal, where the damned suffered perpetual cold, hunger, fatigue, and sickness.

Landa mentions one specific grave, that at Itzamal,⁶ in this brief statement: There was

a large urn with three pedestals, painted with silvered colors outside and enclosing the ashes of a cremated body, along with some of the arm and leg bones, of a marvelous (great) size as well as three worked objects of blue stone.⁷

Landa fails to mention the character of the graves, that is, whether they were merely excavations for simple inhumations or more elaborate stone vaults. We find both types.

Palenque has excellent examples of vaults. Work was carried on at this site by Holmes,⁸ in 1895, who introduces Thompson's report with these prefatory remarks:

The evidence is sufficiently strong that the pyramids and buildings of Palenque were devoted in some measure to mortuary uses, and this too, by the original builders. Such use would appear, however, to be secondary, if, as we are in the habit of assuming, the temples were the sanctuaries of deities. . . . Yet the discovery by Del Rio⁹ of evidence of a burial beneath the sanctuary floor of the Temple of the Cross, of similar evidences by Waldeck¹⁰ in a gallery in what he calls the Temple of the Palace, suggests the possibility that the whole structure . . . may have been erected to do honor to some ruler or religious official whose remains occupied a vault in the body of the pyramid. . . . It was customary, evidently, to build small tombs in the sides of the pyramids, as it was also in Yucatan on the north and Oaxaca on the west.

⁶ Landa., 1864 p. 32, 33.

⁷ Gann, 1905. p. 106 describes calcined bones in vases.

⁸ Holmes. 1897, p. 206.

⁹ Del Rio (Gates reprod. in the Peabody Museum, Cambridge).

¹⁰ Waldeck, 1886, p. iv.

The tombs themselves are described by Mr. Thompson, who accompanied the expedition.¹¹ These appear in connection with the Temple of the Cross, so near the surface that clearing away the vegetation was sufficient to expose either the wall- or the roof-slabs. They were aligned parallel to the façade of the temple, and Mr. Thompson is of the belief that a thorough exploration of the mound would reveal tiers of tombs on all four slopes. Only one tomb was examined. It consisted of a rectangular room roughly six feet by six feet and seven feet high, well-built of limestone material, probably once finished in smooth stucco. The roof was corbelled—the usual Maya arch—and in the center was a rectangular stone burial-case, formed of smooth-finished stone slabs, the cover-slab lying flush with the tops of the sides. On the cover-slab were found broken votive offerings. The grave contained two skeletons, one of which was lying on its side, with hands and knees drawn up towards its chin; the other was too rotted to determine even its position. The grave contained the usual objects (in this case a number of jadeite beads, a spindle-whorl, lance-heads, a bone bead, a good example of an obsidian knife blade, and pieces of well-shaped earthen cups) besides a small clay figurine that is of peculiar interest because of an ornate head-dress.¹²

At Monte Alban, Dr. Holmes discovered a chamber in the side of a pyramid which he figures and labels¹³ as probably a tomb. Its roof consists of two rows of heavy stone slabs leaning together over the midline of the chamber. And the same author states, in reference to the “Building of the Basement Galleries” at Mital that,

it seems . . . highly probable that the galleries were devoted to mortuary purposes.¹⁴

In 1923 Palenque was visited by Mr. Blom for the *Dirección de Anthropología* of the Mexican Government, who reports that

¹¹ Holmes, 1897, p. 207. Maudsley, 1889-1902, vol. iv, p. 27.

¹² Figured in Holmes, 1897, plate xxiii.

¹³ Holmes, 1897, p. 222.

¹⁴ Holmes, 1897, p. 271.

there must be many tombs at Palenque, as the whole area north of the Temple of the Inscriptions, as well as Group A, is a large cemetery.¹⁵ He brought back with him descriptions or plans of eight sepulchres. These structures were all of the chamber type, the first being built like a small terrace, the sides walled, the floor of the terrace being the roof of the grave. This sepulchre contained an entrance leading by two right-angled turns to a room where a tomb of flat, worked stones formed a burial-case, much as described by Thompson above.

Sepulchre 2 also contained an entrance corridor, giving into a small chamber with a Maya arch. Two burials occupied this room, one in a rock-lined grave; the other on top of the grave. The skeletons were badly rotted, but there were nineteen teeth, of which all the incisors were filed. In the grave itself there were twelve teeth, two bored for incrustation (in one the pyrite incrustation still remained).

Sepulchres 3 and 4 occurred together. They were in hewn lime-stone graves covered with dirt, the walls of small stones plastered with lime and clay. The easternmost grave contained a small niche in the west wall about opposite the knee of the skeleton, in which was found a clay olla; another olla painted with 'chacloom' was found to the south side: close to it a 'malacate.' There were pieces of bone and obsidian in the grave. Sepulchre 4 was of better construction than its companion. It contained teeth, of which two incisors were bored for inlays; it also had a niche in the western side-wall.

Sepulchres 5, 6, 7, and 8 offer no great variations from those already described. Number 5 had four burials in one room, the tombs themselves of limestone and plaster. The skeletal material had rotted completely, but the fact that one of the tombs was narrower at the south end than at the north would seem to indicate that the burial had been placed head to the north. Mr. Blom states that in all cases where the skeletal remains were sufficiently preserved for observations to be made, the burials lay head to the

¹⁵ Unpublished notes in Mr. Blom's possession.

north.¹⁶ This is exactly opposite to the ten burials inside the mound at Baking Pot, which we will take up later.

The only variation seen in sepulchre 8 is the fact that the bones lay, head to the north, on a low table of limestone blocks with a little raised edge.¹⁷

In contrast to these burials are those lying at the foot of the Temple of the Cross,¹⁸ to the north of it. These vaults are noticeable as small hillocks. Entrance is effected by excavation which exposes steps leading down into the grave beneath.¹⁹ Mr. Blom states that there are great quantities of these hillocks and that in all probability they cover identical vaults.

There are fewer examples of vaults more or less centrally located in a main pyramid²⁰ proper than of vaults lying on the outside slope or located without any relation to a main pyramid.

Maudsley²¹ describes an opening in the floor of an inner room in the House of the Lion at Palenque. This opening gives entrance to a very steep stairway which descends to a lower chamber devoid of ornament.²² At the southeast corner of this chamber is an entrance (which has at one time been blocked up) to another smaller chamber, now unroofed and open to the sky.

¹⁶ Maudsley, 1889-1902, vol. iv, p. 33, says: "To the S. and S. E. of the House of the Lion along the side of the stream and on hill slopes, there is a collection of low mounds containing a great number of small chambers. Two or three of these chambers contain stone tables and some appear to have passages leading out of them to inner rooms."

¹⁷ Also reported by Guthe, 1921, p. 368.

¹⁸ Maudsley, 1889-1902, vol. iv, p. 27, says: "Two-thirds of the distance up the slope (of the Temple of the Cross) were several sepulchral chambers which had been opened. In one there was a sort of stone coffin of well-cut slabs. The bottom and sides were covered with dark red powder."

¹⁹ Maudsley, *idem*, p. 32, says: "To the north of the Temple of the Sun is another small mound supporting a building . . . This mound is joined by a terrace to the smaller mound which enclosed the sepulchral chambers shown in Plate xc. The entrance to these chambers was originally from the top of the mound by a flight of steps. . . . This entrance has been purposely closed with a large stone slab."

²⁰ The writer distinguishes "mounds" from "pyramids" by position, size, shape, and probable primary purpose.

²¹ Maudsley, 1889-1902, vol. iv, p. 33 and plate 90.

²² Holmes, 1897, p. 188, describes this structure in the Temple of the Beau Relief, which is identical with the House of the Lion.

The other cases of complicated entrances to vaults in main pyramids given by Maudsley are at Menche, in House H,²³ and at Copan,²⁴ the so-called "Ventanas," of which he reports four. These latter are all long tunnels without stairs; at Menche the situation he briefly describes in twenty-six words:

Leading down from the outer chamber are two passages with steps, communicating with an inner and lower chamber, which appeared to have been used for interments.

The vault of Copan, described by Galindo, if not used for burials, must have been an ossuary, for he describes the finding of more than fifty red earthen ware dishes and pots, "many of them full of human bones packed with lime," besides other minor objects.²⁵

A famous tomb is that in the "Temple of the High Priest's Grave" at Chichen Itza. This was discovered by Mr. E. H. Thompson, but there has never been a published account of it, that we know of. It consists of a shaft forty feet long leading down from the floor of the temple through the center of an artificial pyramid to a natural crevice at the bottom. This shaft is easily ascended or descended, for the stone-work on either side of the shaft is specially cut so that portions jut out, thus affording excellent hand- and foot-holds. There can be no doubt that the pyramid was built over the crevice purposely. The crevice runs off at a sharp angle downward for a few feet and then expands into a natural chamber. The descent here, again about forty feet, requires the use of a ladder. Mr. Thompson discovered a burial at the bottom, and there was some grave furniture accompanying it.

One other vault burial of sufficient interest to be classed as unusual is reported by Dr. Gann.²⁶ It was in a pyramid situated close to the Rio Hondo, 80 feet high, 350 feet in circumference, and conical in shape. A passage 3 feet square was discovered 17 feet from the top, which led to a stone-faced chamber. Ex-

²³ Maudsley, 1899-1902, vol. iv, p. 45.

²⁴ Maudsley, 1899-1902, vol. i, p. 31. *Memoirs of Peabody Museum*, vol. i, No. 1, p. 11. Stephens, 1841, vol. i, p. 133, p. 144.

²⁵ Galindo, 1836, p. 545.

²⁶ Gann, 1918, p. 86.

cavation in the floor of this chamber revealed six artificial strata totaling a depth of 12 feet 2 inches, at which depth were found forty skulls, all of people in the prime of life. Beneath the skulls were twelve flints of chert. Other articles found were: a polished red pottery vase (animal form); cruciform obsidian pieces, and a great many obsidian knives.

The skulls were all in the same plane, neatly disposed in rows. Not one could be preserved. With our knowledge of Maya burials at its present low ebb, how shall the burial of forty heads, all apparently in the prime of life, be explained? Dr. Gann makes two suggestions: secondary interment of skulls only, in which case the absence of the very young and the very old is difficult to understand—or the ceremonial burial of the skulls of sacrificial victims—though the Maya were supposed to have practiced human sacrifice but rarely.

It would have been interesting to know the sex of the skulls; if all are male, the interment of the forty skulls could be conjectured, perhaps, as a last honor paid to warriors killed in a single combat.

Before taking up the less spectacular burials, let us turn for a moment to the conclusions reached by Saville²⁷ on some burial mounds in the state of Oaxaca, for they have a relation to the burials already described and may throw light on some of the aspects of burials yet to be taken up.

The mounds excavated were burial mounds, though the author states that other mounds in close proximity might well be house sites, primarily. Their general characteristics are summarized under eight heads, as follows:

1. The graves consist of stone vaults, the doors facing west and sealed with large stones.
2. The funeral urns are placed in front of the tombs, on the roof, or fastened to the facade.
3. The vaults are true ossuaries; the absence of grave furniture is noticeable.
4. The bones are painted red. The tombs contain offerings of food and incense. Absence of decorated vessels in the vaults.
5. The presence of filed and inlaid teeth. (The inlay is hematite.)

²⁷ Saville, 1899, vol. I, p. 350.

6. The burial of decapitated heads.
7. Elaboration of tombs with mural paintings and hieroglyphs.
8. Lack of use of mosaic for decoration as in the Mitla tombs.

The suggestive fact of this summary is that the majority of the above eight characteristics is applicable in some degree or another to reported burials in various more or less distant points of the Maya area. Stone vaults are reported from Palenque,²⁸ Copan,²⁹ Tulum,³⁰ Rio Holmul,³¹ and Rio Mopan,³² vaults used as ossuaries at Copan by Galindo and chultuns used as ossuaries by Thompson.³³ Cysts used for the same purpose rank after inhumation, which Gann³⁴ lists as the most common form of burial. The painting red of bones has not been reported elsewhere, though Maudsley reported a tomb smeared on the inside with red powder,³⁵ and a jaguar skeleton with teeth painted red was found at Copan beneath a mound which contained an earthen pot and traces of bone.³⁶ As for incense, Waldeck³⁷ states that on opening the subterranean chamber at Palenque he was led to believe that it was a sepulchral chamber because of a very strong resinous smell. The absence of decorated vessels is commented on by Gann in at least one specific case³⁸ and the presence of filed teeth is reported commonly.³⁹ So is the presence of decapitated heads.⁴⁰ As to the decoration of tombs, it is scarcely reported, unless we admit the chultuns of Labna, where seven out of thirty-four described by Thompson have either stucco or drawn decorations on the wall. Three of these seven decorated

²⁸ See previous notes.

²⁹ See previous notes.

³⁰ Lothrop, 1924, p. 102, p. 91, pp. 97-98.

³¹ Merwin. Unpublished notes of an expedition sent out by the Peabody Museum of Harvard University.

³² Gann, 1900, p. 692.

³³ Thompson, 1897b, p. 20.

³⁴ Gann, 1905, p. 105.

³⁵ Footnote 2, p. 9.

³⁶ Memoirs, Peabody Museum, vol. I, No. 1, p. 24.

³⁷ Waldeck, 1886, p. iv. See also plate XLI.

³⁸ Gann, 1918, p. 73.

³⁹ Habel, 1880, p. 32, reports from San Salvador.

⁴⁰ Gann, 1918, p. 78. See also footnote 2, p. 3 above.

chultuns can be correlated with the eleven which he positively states contain human bones, and practically all of the 34 chultuns contain artifacts that suggest their ultimate, if not primary use as burial depositories.⁴¹

The two headings of the eight given above that are least applicable to the Maya area as a whole are number 2 and number 8. The latter need not surprise us, for Mitla stands alone in the great use of "mosaic" as ornamentation; but the placing of funerary urns *outside* the vault is a custom that, from all appearances, is not reported elsewhere.

Turning now to the southernmost extreme of the Old Empire we shall examine briefly the burials northward, to a burial found in Puerto Progreso.⁴²

So far as could be ascertained only one grave is reported which contained a stone yoke.⁴³ This is at Apaneca, San Salvador, where two bodies lying in a grave formed by four porphyritic slabs were uncovered. Near the neck were more than two handfuls of pointed teeth and below these carved pieces of jadeite. The "yoke" was of gray, porphyritic stone, highly polished, and horseshoe-shaped. It was sixteen inches long and fourteen inches across the base, and appears to be of a different nature from the U-shaped yokes found to the North. Blackiston⁴⁴ reports many mortuary mounds in the valleys of the Chamelecon and Oloa rivers, in Honduras, usually rising seven to ten feet above the

⁴¹ The writer has heard the following explanations for the probable uses of chultuns:

- a. Cisterns for the storage of water.
- b. Storage places for corn, possibly inside a "bush" house which has long since disappeared. Dr. O. F. Dook of the Bureau of Plant Industry states that the collection of carbon monoxide in these depressions might insure against destruction by vermin.
- c. Burial chambers; ossuaries.
- d. A subterranean chamber where the maintenance of an even temperature would permit weaving of fine workmanship (Panama hats are today woven in cellars and are kept moist).
- e. Ceremonial chambers.

⁴² Boas, 1890, pp. 350-57.

⁴³ Habel, 1878, pp. 32-34.

⁴⁴ Blackiston, 1910.

ground level. In most cases they were encircled by walls of medium-sized irregular blocks of stone brought from the river, these low walls having slight masses of earth in front of them. The bones were usually rotted badly. In the second mound excavated, a vaulting of cleverly fitted rocks was uncovered, and in it were found several ollas containing jade and clay beads, a large bizarre stone figure, a small face with a peculiar treatment of the beard and an aquiline nose, and a highly polished green mask. At another site near San Pedro Sula, a mound was excavated in which the outside retaining wall was extended so that it covered the whole surface of the mound. The other sites examined were practically all burial mounds along the river banks that were being rapidly eroded. The disconcerting fact here is that these eroding banks show no structural lines whatever, so that any guess hazarded as to their age is out of the question. Similarly the finding of a skull at a depth of twenty feet is equally disconcerting, for this may mean a great age, or a very rapid deposition of alluvium by a river constantly subject to floods.

Turning now to Copan, we find two classes of burials: Tombs or vaults of cut stone, and burials in a mound numbered 36.⁴⁵ The tombs may be vaults at the ends of long shafts, or they may be sepulchral chambers. These latter occur in the widest range of localities—two under a level court; one under the steps of mound 32, another under the steps of a ruined house, and five outside the ruins proper. Of these, two occurred in special mounds, while three were in perfectly level terrain, the roof-stones projecting but a few inches above ground. The walls usually have niches, and the vault is the usual Maya corbel. From Tomb 1 were taken two skeletons, four incisors with circular jade inlays, twelve earthen vessels, one of which is the magnificently modelled head of a wolf, now in the Peabody Museum; pottery whistles, shell ornaments, jade beads, bone needles, and the tops of two peccary skulls beautifully carved. This is a rich find, and rather overshadows finds in other tombs, if we are willing to suppose that a horse's tooth from Tomb 3 is an attempt to be amusing on the part of some post-Columbian rodent.

⁴⁵ Mem. Peabody Museum, vol. 1, no. 1.

The second class of burials, those excavated in 1892 by Mr. Owens in Mound 36, consisted of three dozen skeletons, found in a mound 130 feet long and 30 feet wide, $3\frac{1}{2}$ feet high, and rising very regularly to the center. The surface was covered with large cobble-stones. Excavations revealed cement floors and walls, though these latter were not for supporting a roof. The floor foundations were pebbles. Scattered throughout the mound were potsherds, pots, pieces of bone, obsidian knives, etc. Ash beds with deer bones were noted. Some skeletons had the appearance of being buried, while others were apparently hurled in. Of the skeletons four had teeth either filed or incrustated, and one had teeth *both* filed and incrustated. Jade, not pyrite, was used for the inlay; two skeletons were buried on their back, one with the legs flexed over the abdomen; one was buried in a sitting posture, with the head bent over onto the pelvis; six were buried on one side, with either the hands under the face or the knees flexed under the chin, or both; and two were buried inside a circle of river stones. Burials 25 and 26 were so intermixed that it would seem to have been a secondary burial; and one burial had a rude shelter of four stones built over the skull.

Let us leave the ruins of Copan proper and note what Gordon says of the caverns near there.⁴⁶ It does not simplify our subject to do so, for besides a skeleton in a sitting posture, knees at chin, which crumbled into fine dust at a touch, he found, in Chamber 2 of the cave, that he was walking in soft, deep dust which crackled slightly, and upon investigation found that it was a veritable charnel-house of bones, all so badly decomposed as to be absolutely useless for study. Jars had been placed around the walls, but these contained nothing, apparently, but dust. Although the cave showed no signs of fire, he could only infer from the condition of the bones that it had formerly been used as a repository for the ashes of cremated bodies. Then he was lowered on a rope a hundred feet into another cave, and there the only reward consisted in the remains of a badly decomposed skeleton embedded in stalactite formation at the bottom. This may well have been

⁴⁶ Gordon, 1898.

the result of an accidental fall from the only opening, which was through a hole in the roof. Besides these extraordinarily unsatisfactory finds, Cave 3 yielded two jars containing charred fragments, which are probably the remains of an infant. The fact that the pottery found was of a type earlier than, though not inferior to, that of Copan does not clarify the situation.

In contrast to these caverns of the Old Empire, Mercer⁴⁷ reports that in the caves of the New Empire, his finds do not show any intention on the part of the population to utilize them as places of continued burial, since in that more arid region the caves are sources of water supply and not a place to be polluted with corpses. At Xhambak,⁴⁸ however, he found skeletons whose bones showed no signs of burning, along with mortuary vases, and at the Cave of Actun Coyok,⁴⁹ a trench in the cave floor revealed a disturbed mass of potsherds, stones, charcoal, and ashes. The greatest depth of soil above the cave floor was seven inches. This occurred just above a fissure in the natural rock, and here were found pieces of human tibiæ, fibulæ, ulnæ, clavicles, metapodials and vertebrae, and two fragments of femur "split as if for marrow." But the lack of tools and implements lead him to believe that the caves were used merely as temporary places of refuge and possibly for the practice of cannibalism. If his latter belief is founded upon the one find of split femurs it rests on a very slender base. Out of the 29 caves visited, only 13 were of archaeological interest, and only 5 of the 29 contained human bones or fragments.⁵⁰

Thompson's finds are also against the use of caves as burial places. In his first report ⁵¹ he states that in none of the cavities examined, of which there were more than a hundred in the Cave of Loltun, did he find the trace of any human remains. In his second report⁵² an inscription on a rock led him to believe that it

⁴⁷ Mercer, 1896.

⁴⁸ *Idem*, p. 34.

⁴⁹ *Idem*, p. 130.

⁵⁰ Mercer, 1896, p. 160.

⁵¹ Thompson, 1897a.

⁵² Thompson, 1897b.

indicated a body swathed in mummy clothes, and that it is also a fact that the innumerable niches and cavities in the caves would be the most suitable place for the deposition of bodies. In ash and refuse filling a cavity of the floor in the Room of Inscriptions he found fragmentary portions of human bones and human teeth filed into curious forms.⁵³ But on the whole, the evidence is strongly against the use of caves in Yucatan as a usual burying-place. Had it been so, the dense population which must have existed when the Maya were at their height, would probably have rendered these caves archaeological treasure-houses.

Passing on to British Honduras, Price⁵⁴ describes a grave at Kendall, on the Sittee River. This consists of a three-sided chamber on the north slope of a mound 28 feet long and 20 feet wide. It is unusual in that slabs of slate are used for the side-walls, as well as for stelae elsewhere in the ruin. This chamber was three feet wide and eight feet long, about 4 feet deep on the inner side, but only 1 foot on the outer, owing to the slope of the mound. As usual, the skeletal material was beyond salvaging, but the grave objects consisted of half a bivalve shell, (jade) a mask, beads and 5 celts, all of jade,⁵⁵ small pottery alligator heads, and two circular discs of iron pyrites. A grave similar to this (except for the use of limestone instead of slate) has been reported at Acanceh, Yucatan.⁵⁶

About twenty mounds have been examined by Dr. Gann in British Honduras and the adjacent territory. As a result of his work he lists the modes of burial in their order of frequency, as, first, inhumation, either recumbent or sitting; second, cyst-burials, especially secondary (i.e., as ossuaries); third, cremated remains in funerary vases.⁵⁷

A good example of inhumation is Mound 1 near Corozal.⁵⁸ This is a circular mound 30 yards in diameter and from 5 to 6 feet high in the center. It is composed of three layers of rubble and

⁵³ *Idem*, p. 19.

⁵⁴ Price, 1889.

⁵⁵ Illustrated in Gann, 1918, plate LXIX.

⁵⁶ Breton, 1908.

⁵⁷ Gann, 1905, p. 105. Compare Thompson, 1904, p. 7.

⁵⁸ Gann, 1914-1916.

two layers of cement. It contained twenty interments very irregularly placed, the burials being in a squatting position with the knees under the chin and the hands over the ankles or feet. Only six burials had objects—a flint arrow head; a flint hook; a pottery spindle whorl; two obsidian knives; a perforated object of mother-of-pearl; a leaf-shaped spear-head eleven inches long; a polished jade bead; a spherical hammer stone; a curved flint scraper (?); a pear-shaped flint, and a casket containing over one hundred teeth.

In this same group a similar circular mound (Mound 4) contained a cyst floored and was roofed with irregular slabs of stone. The presence of bones in circular bowl-shaped vases was all the indication that the mound was a burial mound.

Near Progreso on Lowry's Bight, the same author reports a vase containing a small earthenware bead, a small obsidian knife, and the terminal phalanx of a small finger, and states that

we learn from contemporary sources that on the death of a beloved child the mother cut off the tip of her finger and buried it.⁵⁹

Near Succotz Merwin reports a circular burial mound ten and a half feet high and sixty-eight feet in diameter; it contained within it rectangular retaining walls. It was built up of successive strata, each stratum following the curve of the mound's surface, much as would the layers in an onion cut in half, the flat part of the onion representing the bottom of the mound. In it was found a burial.⁶⁰

A similar mound was excavated by the writer at Baking Pot, in British Honduras, during 1924. This site was chosen for excavation as being the probable location of ancient Tipu, described by Fuensalida and Orbita⁶¹ and others. No other ruin in the region fulfils all the conditions required; not only this, but the map given in Avendano⁶² places Tipu on a *rio grande* (which we may suppose to represent the Belize River) and not on another

⁵⁹ Gann, 1914-1916, p. 38.

⁶⁰ Merwin, 1909-10.

⁶¹ Means, 1917, Chap. v.

⁶² Map. Avendano and Loyola, Gates reprod.

rio grande indicated as lying to the north (probably the Rio Hondo). Means shows Tipu on this latter stream, but he never visited the region and could not know that the Rio Hondo, as its name signifies, is a slow and sluggish stream, while the description by Fuensalida and Orbita distinctly states⁶³ that they ascended a very turbulent stream with great difficulty—and the Belize River is just such a stream.

The excavation at this site was concentrated on Mound G, which stood in a prominent position on the north side of Plaza III, the highest plaza in Group I. The mound was 5 meters high and 25 meters in diameter. Excavation revealed that retaining walls just below the surface of the mound enclosed a dome-shaped rubble construction in which plaster floors, three in number, followed the curve of the surface of the mound. The retaining walls, themselves curved, averaged less than a meter at the corners (they were rectangular) but at the mid-sides rose to an average of 2 meters. Obviously the construction of this mound was primarily for burials; it is not conceivable that had it originally been planned for a substructure that the three plaster layers forming the floors would have been curved.

In the center of the mound, at a depth of 2 meters, a sepulchre was found with the remnants of a skeleton lying face down, head to the south. This vault was made of hewn limestone 2.6 meters long and 1.3 meters wide, and covered with large flat unhewn blocks of stone. Although the skeleton was badly rotted, shafts of long bones still remained, and the nubby appearance of the shaft of the left femur closely resembled the lesions of a very virulent disease, like syphilis.⁶⁴ The incisor teeth were bored and inlaid with iron pyrite. The grave furniture consisted of two pots, both of black ware, and three-legged. That at the head was incised with a mat design, the one at the feet was plain. Besides these objects the grave contained several jade beads, two small jade ear plugs, a dozen or so diminutive pieces of polished jade (about the size of peas) equally small pieces of pyrites, and four small pieces of worked bone.

⁶³ Means, 1917, p. 63.

⁶⁴ Compare Gann, 1918, p. 62.

Excavation around this vault on all sides, (except the west) revealed nine other skeletons, all lying head to the south, face down, and parallel to the main grave. All were simple inhumation. The entire space excavated to uncover these skeletons, including the vault, was only 4.9 by 5.9 meters. Skeletons 4 and 5 were to the south of the vault, the one directly superimposed upon the other so closely that we must suppose simultaneous burial; neither heads nor teeth of either could be found. Skeletons 7 and 8 lay north of the vault, side by side, but no. 7 grave pierced the second plaster floor, while no. 8 lay just on top of it. On the east of the vault were 5 skeletons. No. 9 lay alone, but nos. 11 and 13, and nos. 12 and 14, respectively, were superimposed, and again we must suppose simultaneous burial for each pair. It may be interesting to note that no. 12 was a woman, with filed teeth; no. 14 was buried directly beneath her pelvis and was a child who still retained its deciduous teeth. Of the others the following points may be noted: no. 8, a female, had filed teeth; no. 7 lay beneath a pile of rock, which covered the right leg and innominate; upon removing the stones, the leg was discovered to have been destroyed, probably by a secondary interment.⁶⁵ The other femur, in situ, showed excessive growth of the great tuberosity, and the humerus on the same side was shortened, twisted and with unusually enlarged condylar processes at the inferior end. Burial 7, as already stated, pierced the second plaster floor; the sepulchre (No. 15) lay beneath the third floor; all the others occurred between the first and second. The relatively good condition of all these bones must be attributed to the excellent drainage yielded by these curving floors as well as to the run-off afforded in the fairly steep slope of the mound.

Four other skeletons were uncovered; one lying face down, head to east, a few inches below the surface on the south slope of the mound, and three close together just outside the retaining wall, also on the south side of the mound. Of these one, buried on the back, lacked both pelvis and legs; the next, directly superimposed above the third, also on the back, lacked the left leg

⁶⁵ There was no time to explore the rock pile.

though the head of the femur and part of the neck was still in the acetabulum; his right leg was flexed at the hip so that his foot lay close to and above his head. Both of these skeletons were of unusually large size and showed great development of the ridges for muscular attachments. Their skulls showed no deformation. The third skeleton lay on its side directly beneath no. 2, hands drawn up in front of the face and the legs flexed under the chin. This was a typical Maya skeleton, with small light bones and very marked fronto-occipital deformation.

It may be noted in passing that of these fourteen burials only two contained any grave furniture beyond shards. These were the chief in the sepulchre, already described, and no. 13, who had near the head a piece of worked shell, two small cylindrical rolls of bone and pieces of a deformed deer antler. From the trenches around the mound itself great quantities of shards were taken, many of which could be pieced together, and one terra-cotta human figurine about four inches high, of red clay. Spherical hammerstones, showing abrasions at both poles, were fairly common; a half dozen flint knives, spear-heads and picks were unearthed. Near the center of the mound was found the calvarium of a skull, neatly cut to use as a cup or vessel; the bottom of it was much worn, either purposely in order to make it sit on a flat surface or from long use. Besides it was another piece of skull and a splendid example of an obsidian drill, evidently the implement employed to drill the hole that was to be seen in the piece of skull.

Summarizing the work in the Maya area, it would seem that to date the work has been of an exploratory nature, and that the archaeologists who have worked in this little-known field have had neither the time nor the patience to investigate the anthropological side, and in all probability go into the field without suitable preservatives for the very rotted bones.

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THE HOKAN AFFINITY OF SUBTIABA IN NICARAGUA

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INTRODUCTORY

IT IS the purpose of this paper to follow up a valuable hypothesis which Dr. W. Lehmann has recently proposed in regard to Subtiaba, a language now spoken by only a small number of Indians in a village near León, on the Pacific slope of Nicaragua.¹ This language is known to us also under the names of Maribio and, mistakenly, of "Orotina" and "Nagrando." Our material

¹ See W. Lehmann, *Zentral-Amerika. I. Teil: Die Sprachen Zentral-Amerikas II, Band* (Berlin 1920), see pp. 910-978, which are devoted to Subtiaba and Tiappaneé. The close relationship of these two languages was first demonstrated by Lehmann in 1915, see *Zeitschrift für Ethnologie*, 1915, pp. 1-34.

is due mainly to what Dr. Lehmann could obtain in 1908 and 1909 from an aged woman in the village of Subtiaba (Jiquilapa), but is supplemented to some extent by earlier vocabularies collected by Squier, Don Francisco Arragon (published by the Comte de Charencey), and Berendt (published in Brinton's *American Race*). For a long time the language was believed to be an isolated one, aside from a small enclave (Guatajiguala) further north in the Lenca country in Salvador. But it appeared later that it is very closely related to Tlappanec or Yopi, a language spoken in the state of Guerrero in southern Mexico, on the western border of the Mixtec area. Though what we know of this second language is apparently limited to a vocabulary of 69 words published by N. Léon in 1912, it is quite enough to show at once that Subtiaba and Tlappanec are really only dialects of a single language, differing no more, say, than Cree and Fox or than Ute and Southern Paiute. It is probable that they are mutually intelligible or nearly so. This is surprising in view of the tremendous distance which separates them, though there is plenty of precedent for this kind of distribution in America (cf. Pipil-Nicarao and Nahuatl; Mangue-Chorotega, Chiapanec, and Mazatec).

This Mexican and Central American language is of very special interest to students of the languages and cultures of the United States because of the great likelihood that Dr. Lehmann is correct in his surmise that it is related to certain languages of California. He seems to believe in a special relationship with Washo, of eastern California and western Nevada,² but I believe that this specific formulation of the theory is not quite acceptable. Since Dr. Lehmann first observed the remarkable analogy between the nominal *d*-prefix of Subtiaba and that of Washo, Dixon and Kroeber, J. P. Harrington, and the writer have been led, independently of each other, to affiliate Washo with the Hokan group (then consisting of Karok, Chimariko, Shasta-Achomawi, Yana, Pomo, Esselen, Yuman, Chumash, Salinan, Seri, and Chontal or Tequistlateco). The present writer was further led to connect with these Hokan languages a group of languages (Coahuilteco, in-

² See pp. 973-975 of *Zentral-Amerika*.

cluding Comecrudo and Cotoname; Tonkawa; Karankawa; and perhaps Atakapa) spoken in northeastern Mexico and southern Texas, along the Gulf of Mexico, and introduced the term "Hokan-Coahuiltecan" for this enlarged group. An examination of Dr. Lehmann's material has convinced me that he is essentially correct, but that Subtiaba and Tlappanec are to be regarded as a southern outlier of the Hokan-Coahuiltecan stock as a whole, not of a subdivision of this group to which Washo belongs in particular. Aside from the *d-* (or *t-*) prefix, which is shared by Salinan and Chumash (San Luis Obispo dialect), and of which reflexes probably exist elsewhere in Hokan-Coahuiltecan, there seem to be no lexical or morphological agreements that would justify our setting off Washo and Subtiaba-Tlappanec against the other Hokan and Coahuiltecan languages. Of the seven lexical parallels that Dr. Lehmann gives between Washo and Subtiaba, four are probably correct;³ they are noted below. Each of them has other Hokan cognates as well.

In preparing the following list of cognate words and elements in Subtiaba (and Tlappanec) and Hokan-Coahuiltecan I have not by any means made use of all the dialectic Hokan and Coahuiltecan material which is available for comparison, scanty as that really is, but have limited myself in the main to the material which has already been presented in comparative form in other papers.⁴

³ These are words for "mouth," "nape," "sun" ("day"), and "frog." His comparison of the words for "tree," "silver," and "elbow" can hardly be correct and are partly due to misunderstandings. Washo *bēcu* "silver," which he compares with Subtiaba *baxka*, is to be read with *c* = English *ch* and is obviously borrowed from Spanish *peso*. Washo *d-utsu* "elbow" cannot be compared with Subtiaba *isu*, which Dr. Lehmann inadvertently translates as "elbow." His material shows that this word really means "bone," "elbow" is *isu-paxpū*, literally "bone of arm." For Hokan cognates to Subtiaba *isu*, see no. 4 of our list.

⁴ See E. Sapir, *The Position of Yana in the Hokan Stock* (University of California Publications in American Archaeology and Ethnology, vol. 13, pp. 1-34, 1917), cited as *Yan*; R. B. Dixon's and A. L. Kroeber's list of Hokan elements which have cognates in Washo and my own similar list in their *Linguistic Families of California* (*ibid.*, vol. 16 pp. 104-112, 1919), cited as *Was.-Hok*; E. Sapir, *The Hokan and Coahuiltecan Languages* (International Journal of American Linguistics, vol. I, pp. 280-290, 1920), cited as *Hok.-Cea*; E. Sapir, *A Supplementary Note on Salinan and Washo* (*ibid.*, vol. 2, pp. 68-72, 1922), cited as *Sup.*

It is highly probable that a detailed comparison with such Hokan-Coahuiltecan languages as Seri, Yuman, Chumash, and Tonkawa would disclose a great many additional Hokan cognates in Subtiaba. The orthography has been slightly simplified and normalized, so far as possible, to current Americanist usage in this country. Stress accents have been omitted. A number of phonetic and morphological observations on Subtiaba follow the list of suggested cognates.

I. HOKAN ELEMENTS IN SUBTIABA⁵

A. Body-Part Nouns

1. arm: *paɣpu*, Sq. *pa'pu*, Ar. *pahpa* (probably "thy arm"; -*u*-, -*yu*- is "my," -*a*-, -*ya* "thy" in Sub.). Cf. Chim. -*pu* in *h-itan-pu* "arm" (*itan*- is "hand"); Chum. *pu* "arm, hand"; Sal. *puku* "arm."
2. back: *su-gitcu* "back," *gitcu* (e. g. *gitcu-naxku* "back of foot"; *gitcu* is compounded of local *gi*-, see no. 113, and stem -*tcu* or -*itcu*, hence literally "at rear"), *gitca* "behind, back of." Cf. Sal. *ɬ-itcom* "back," *ɬ-itcomo* "behind"; Com. *semi* "after."
3. blood: *ɛdi*, *ɛ'di*, Sq. *e'ti*, Ar. *edi*. Cf. Sh. *axta*, Ach. *axdi*; Kar. *ax*; Yan. *wat'du-wi* "blood," -*wat*- "red"; S. Po. *hata* "red"; Moh. *ahwata* "blood," Dieg. *axwat* "blood"; Yum. *xwat* "red"; Se. *awat* "blood"; Chon. *awas*; Sal. *p-akata*, *ekata*; Chum. *axuli-s*. Hokan **axwati*?
4. bone: *i'su*. Cf. Moh. *isaka*, Dieg. *hak*, Wal. *tyaga*; Sal. *axa'k*, (*p*-)*axak* "bone," *k-exakop* "bony"; Chum. *se'*; Se. *itak*; Es. *iya*; Po.⁶ *ihya*, *iya*, *iha*, *hiya*, *ya*; Sh. *ak*; Yan. *i'dal-la*. Hokan **ihyaka*?

⁵ Subtiaba forms not otherwise indicated are from Lehmann's material; Squier's Arragon's, and Berendt's forms are respectively marked Sq., Ar., and Br. The following abbreviations are used:

Ach., Achomawi	Com., Comecrudo	Moh., Mohave	Tlap., Tlappanec
At., Atakapa	Cot., Cotoname	Po., Pomo	Ton., Tonkawa
Ats., Atsugewi	Dieg., Diegueño	Sal., Salinan	Wal., Walapai
Chim., Chimariko	Es., Esselen	Se., Seri	Was., Washo
Chon., Chontal	Kar., Karok	Sh., Shasta	Yan., Yana
Chum., Chumash	Karan., Karankawa	Sub., Subtiaba	Yum., Yuma
Coa., Coahuilteco			

⁶ I quote different Pomo and Chumash dialects without specifying them in each case.

5. breast: *sosto*, *socto*, perhaps also compounded as *so-* in *so-gi'a* "breast-chain" (qualified elements nearly always precede in Sub., however), Ar. *sosta*. Cf. Wash. *cu* "breast"; Chum. *usu'i* "chest, heart"; Chim. *h-usi* "breast"; Sal. *icu'*, *ico'* "breast." Further, perhaps, Chim. *cira*, *ci'ila* "woman's breast, milk"; Po. *sido*, *cido*, *ci'do* "female breast, milk."
6. breast (of female): *tcit'ci*. If not borrowed, as Lehmann plausibly suggests, from Nahuatl *chichi* "to suckle," cf. Yan. *tc'ik'i* "female breast"; Sh. *itsik* "milk," Ats. *atciska*, Ach. *i'tc'it* "milk, female breast"; Dieg. *itciv* "breast, heart"; Ton. *yatcax* "breast"; At. *itsk*.
- 6a. breast (of female): *d-u'du-lu'* (or perhaps better analyzed as reduplicated *dwdu-*), compounded as *-du-* in *ca-du-lu'* "suckling," *tca-du'*, *tca-a-du'* "suckling." Cf. Po. *to* "female breasts, milk," also compounded as *-do* in *si-do*, *ci-do*, *ci'-do*, *s-do*, S. E. Po. *ko-do-n* (or *k-odo-n*) "female breasts, milk"; Chum. *k-utet* "woman's breast."
7. ear: *n^yay*, Sq. *nau*, Ar. *n^yqwa* ("thy ear"), Br. *nyahu*. Cf. Chon. *icma-ts*; Se. *isto*; Moh. *'amalya*, Dieg. *'omal*; Po. *cima*; Chim. *h-isam*; Sh. *isak*, Ats. *asmak*, Ach. *issat*; Kar. *itiv*; Yan. *mal'gu*, Yahi *man'gu*; Sal. denominative verb *p-esno-*, *p-esna-* "to hear, listen"; Was. denominative verb *d-amal* (from **d-asmal*?) "to give ear, to hear." HOKAN **isama*, **isma(l)k-*? For Sub. *n^y-* from *im-*, see Phonology.
8. excrement: *amba* (from **apa*, see Phonology). Cf. Chim. *h-ipxa* "intestines"; Sh. *ipxai* "intestines"; Yan. *p'a-ts'i* "excrement"; Po. *i'pa*, *apa*, *fa* "excrement, intestines"; Sal. *p'xat* "excrement, intestines."
9. eye: *si'tu*, *s'ita*, Sq. *situ*, Ar. *situ*, Br. *siktu*. These forms are probably to be understood as *si'tu*, which is confirmed by *suxtu* "eyelid"; cf. also Ar. *tasu-suxta* "eyebrows" (*tasu-* "hair," see no. 12). These two forms suggest compounding: **si-i'tu* (or **sa-i'tu*) "eye" and **su-(i)'tu*, originally "hair of eyes, eyelashes" (cf. no. 12)? This **-i'tu*, without preceding sibilant element, is in all likelihood actually found in *yi'tu* "tear," contracted from **ya-i'tu* "water of eye"; for compounded **ya-*: absolute *i'ya* "water," see morphology. Cf. Se. *ito* "eye"; Moh. *-i'do*, Dieg. *iyu*; Sal. *t-uwu*, *t-u* "face," *u-ca-t* "eye-water, tears"; Po. *ui* "eye," *yu-xa* "eye-water, tear"; Chim. *h-uso-t* "eye," *h-isu-ma* "face," *h-uso'-xa* "eye-water, tears"; Sh. *oi* "eye," Ats. *oiyi*; Kar. *yu-p*, Yan. *tc'u-na* "eye, face." HOKAN **isyu*?
10. face: *i'nu*, *i'na* ("my, thy face"), *d-i'nu-lu'* (for *d-* and *-lu'*, see nos. 120, 122), Sq. *inu*, Ar. *ina*, *inna* "thy face"; stem *i'nu-* shown in *i'nu-mba* "mask" (lit.; "face-great"). Cf. Chim. *-ma* in *h-isu-ma* "face" (compounded with *-isu-* "eye," see no. 9); Po. *huma* "face" and, compounded

- with *ui-* "eye," *ui-mo*, *hui-'mo*, *huu-mo*; perhaps also in E. Po. *mu-su* "hair" (lit., "face-hair" ? cf. no. 12).
11. fat: *d-asu*. Cf. Yan. *hau-yau*, *xau-yau* (*-yau-* is nominalizing). Hokan **axau-* ?
12. hair: *t-asu* (absolute form), Sq. *tu'su*, Ar. *tasu*; compounded as *su-* in *su hu* "hair of head," perhaps also as *su-* in *su-xtu* "eyelid" (properly "eyelashes?" see no. 9). Cf. Chum. *o'c* "fur"; Was. *d-ayuc* "hair"; perhaps also E. Po.-*su* of *mu-su* "hair" (really "face-hair" ? cf. no. 10).
13. hand: *n^yau*, Ar. *naow-a* ("thy hand"), Br. *nyau*; Sub. *n^y*, as Lehmann points out, seems to result generally from *i+n* (or *m*, see Phonology), e.g. plur. *-inu* or *-n^yu*. Cf. Se. *inol*. It seems better, in view of this comparison, to disconnect Se. *inol* from Hokan reflexes of **iḡali* "hand, arm" (see Yan., no. 23; *Hok.-Coa.*, no. 18; *Sup.*, no. 18, p. 68).
14. head: *etcu*, *etca* ("my, thy head"). Ar. *etcoe*; Tlap. *etcu*. Sub. (ε)*tcu* as stem is clearly indicated in *gi'-tcu* "on, upon," which contains local *gi'* (cf. *gi'-tca* "behind," no. 2.), hence lit. "at head." Cf. Chum. (San Luis Obispo dialect) *co* "head, hair" (for possibly more remotely related forms, see Yan., no. 169; e. g. Sh. *innux* "hair," assimilated from **is-nux* from **isu-nax* "head-hair" ?)
15. liver, gall: *gi'ko*, *gi'ka* "liver" (with *g-* prefix), *pu ru i'ko* "much gall, gally." Cf. Sal. *t-erk*, *t-iek* "animal's gall"; E. Po. *b-iko* "bitter" (with adjectival *b-* prefix? see morphology); Was. *ts-iga-l* "kidney."
16. mouth: *d-a'u*, *d-a'u*, *d-a'u*, *d-aṅṅwa* ("thy mouth"), Sq. *d-ahnu* (= *-a'u?*), Ar. *d-anwa* (= *-aṅwa*), *d-aowa* ("thy mouth"), Br. *d-aghu* (= *-aṅu*, *-aṅu?*). This word, with its evidently elusive phonetics, seems to be properly *-aṅwu*, *-aṅwa*. Cf. Chim. *h-awa*; Sh. *au*, Ach. *aph*; Was. *-ha-ṅa* (noted also by Lehmann); Po. *aha*, *ha*, *ha-mo*; Moh. *'i ya*, Dieg. *'a*, Kiliwi *axaa*, Cochimi *xaa*; Chum. *ok*, *uk*, *ao-tc*; Ton. *kala*; Com. *xal* "lip"; Hokan **a(ṅ)ṅwa?*
17. navel: *d-u mi'u*. Cf. Chim. *h-onapu*; Ats. *ts-up'-dis*; Was. *d-i p*. Hokan **-unapiw-*? (**-unap-*, with loss of second vowel, assimilated to **-ump-*, whence **-upḡ-* and **-umm-*, according to language?).
18. neck: *ha'pu* "nape," *lu-ha'pu* "neck," compounded in *a'pu-nana* "necklace." Sq. *abu-lu* "neck," Ar. *apa* ("thy neck"). Cf. Was. *d-i bu* "neck" (noted by Lehmann); Dieg. *ipuk*, Wal. *ipuk*, Yum. *cpok*; Ton. *hepei(a)*; perhaps also Sal. *apc-nik* "necklace."
19. nose: *d-a'ko*, compounded in *d-aga-mba* "nose-big, aquiline nose." Sq. *t-a'ko*, Ar. *d-a'hka*, *d-a'ka* ("thy nose"), Br. *d-akko*. Cf. Moh. *-i'hu*, Dieg. *-exu*; Es. *h-oci-s*; Chim. *h-oxu*;

- Kar. *yufi*; Se. *uuf*, *hif*; Chum. *n-oŋc*, *n-oŋ*; Com. *yax*; Cot. *ya'x*, *yax*. Hokan **yaxu*?⁷
20. tooth: *si'n^uu*, *si'n^ua* ("my, thy tooth"), Sq. *si'mu*, Ar. *si'n^uu*, Br. *sinn^uy*; properly *si'-n^uu*? Cf. Ach. *ilsa*, Sh. *εtsau*, New River Sh. *k-ilsau*. Ats. *ilsau*; Chim. *h-utsu*; Yan. *k'i-ts'au*-; Chum. *sa'*; Sal. *suluknai* (with inserted plural *-l-*?).
21. wing: *t-ala'la*, *d-ala'la* "wing," also *t-ala'la* "bat," Ar. *t-alala* "feather." With final reduplication, which is quite characteristic of Hokan (see Chim., Po., Was., Es., Sal.). Cf. Ats. *palala* "butterfly"; Was. *palolo* "butterfly"; C. Po. *lila-wa* "butterfly"; Sal. *t-āpi-lale* "bat." These Ats., Wash., Po., and Sal. forms are probably derivatives of an old Hokan stem indicating "wing, to flit" (cf. Sub. "bat" above).

B. Animal Nouns

22. frog: *kosta-lu'*. Cf. Was. *ko-da* (noted by Lehmann); Chim. *qātu-s* (i. e. *kətu-s*).
23. rabbit: Tlap. *tcuaxi*. Cf. Yan. *dju'wa*; Es. *tcici*. Hokan **tcux(w)a*?
24. spider: *a'ŋka*. Cf. Ach. *ts-axa*, Sh. *-t-aki* of *kusi-taki*; perhaps also Was. *ts-uku-* of *tsuku-man*; Sal. *l-aka-* of *laka-na*. Ach. *ts-* prefix: Sh. *t-* (*d-*) prefix is illustrated also in Ach. *tsukxa* "blackbird," Ats. *tsokha*: Sh. *duk'i*; cf. also Ats. *ts-up-dis* "navel"; Was. *d-i-p*: Chim. *-onapu* (no. 17). Was. *ts-* prefix is indicated also in *ts-iguguc* "belly": Chum. *akcuu*; see also nos. 15, 52. For Sal. *l-* prefix, cf. *l-ε-m* "sky," no. 44.
25. worm: *un^uu* (from **imu*? cf. *n^uqu* and *inu-*, nos. 7 and 10). Cf. Chim. *hemu-ta*; Sal. *t-imchai*, *t-almui* (these two Sal. forms can hardly be disconnected; perhaps *-l-* of *t-almui* is collective, as frequently in Sal., leaving as stem *-ime-*, *-amui*).
26. ant: *i'ŋki* "olosica" (kind of ant). Cf. Sal. *ilkat* "ant" (with collective *-l-*? cf. nos. 20, 25).
27. lizard: *ωs'n'go* (*ωs'xko*? Lehmann's orthography is not quite clear to me). Cf. Sal. *swakaka*, *cwa'keka'*. Hokan **aswanka-*, **aswa'nka-*? This word seems to be derived from Hokan **aswa(-n-)*, **iswa(-n-)* "fish": Po. *ca*, *aca*; Sal. *cwa'-n*, *swa-n*, *cwa'-x*; Ton. *esva-la-n*.
28. louse: *ia'xa*. Cf. Sal. *t-ik'e'*, *ike*.
29. woodpecker: *en^uu*. Cf. Sal. *t-enak*. Hokan **inak*?

⁷ This example is very doubtful, as Sub. *du'ko* seems to belong rather with another group of forms, e. g. Arawak *-taki*, *-tako*, Canixana *-taga*, Chorotiga *-talso* (see A Trombetti, *Elementi di Glottologia*, p. 320).

C. Natural Objects

30. clay, mud: *gu ba* "clay," *ra-gu-ba* "dirt," Sq. *gu-ba* "earth," Ar. *guuba* "earth"; Tlap. *kuba* "hill." Cf. Was. *tsa-kopi* "mud."
31. day, today, sun, moon: *endo, endo* "today," Sq. *endo-la* "day-this" (see no. 104), "today," Ar. *endo* "day," *indo-la, endo-la* "today"; from **i-nwa* "this day" (see no. 107a; for phonology, see below). Cf. Moh. *anya* "sun"; Chum. (S. Cruz dialect) *t-anum* "sun"; Sal. *na* "sun"; Coa. *a-nua* "month." Jere belong perhaps also Po. *la* "sun," *ala-ca* "moon"; Chim. *ala, ala* "sun, moon"; Com. *al* "sun"; Chon. *ora, kal-ora* "sun"; also Was. *lot* "yesterday" < **(a)lwa-t* "day-that"? Hokan **anwa, *akwa*?
32. day: *bii*, Sq. *bi, bi-lu*, Ar. *bii*; Tlap. *bihi* (read *bii*?). Cf. Was. *d-i-be* "sun, moon, month," *ε-be* "day" (also noted by Lehmann); Moh. *'ipily-k* "hot, day," Dieg. *'upit* "hot"; Chon. *epal* "hot."
33. day: *-ci-i, -ysi-, -si* "day" in adverbial compounds *di-ci-i* "yesterday," lit. "that (past) day" (for *di-*, cf. no. 107), *ga-ysi-yu, ga-si* "tomorrow," lit. "that (coming) day" (for *ga-*, cf. no. 106; this demonstrative may be identical with Sub. *ga-*, verbal prefix denoting futurity); Sq. *di-ci* "yesterday," *ga-si* "tomorrow"; Ar. *di-ci* "yesterday," *ga-si* "tomorrow, in the morning." Cf. Es. *asi, aci* "sun," *asa-tsa* "day"; Chim. *asi* "day"; Sh. *atcaii*, Ats. *assi-yi* "day"; Se. *sax* "sun," *isax* "moon"; Chum. *ican, al-ica, al-aca* "sun." Ton. *etc-nan* "day"; perhaps also Po. *m-atci, m-adj, m-itci-l* "day" (for *m* see Morphology); and Sal. *icxai, esxai* "morning, day." Hokan **asi, *isa* is also found, in all probability, as incorporated *-si-* in Yan. *-si-ri-bal- . . . -'a-*, suffixed to numeral stems and indicating "so and so many days (nights) elapse," literally "to have so and so many suns go down and up" (*-ri-* "down," *bal-* "up," *-'a-* causative); perhaps also in Yan. *b-asi-* "to be yesterday, night" (refers to periodic lapse of time, not to darkness), for *b*-prefix see Morphology.

NOTE TO NOS. 31-33. In comparing these three words for "day," one is led to surmise that Hokan **anwa* (**akwa*) (no. 31) meant properly "luminary, sun, moon," Hokan **ipi* (no. 32) "day (as period of warmth), day-heat" (observe that Wash. *d-i-be* "sun, moon" is derived by means of nominalizing *d-* from *ε-be* "day," not reversely), **asi* (no. 33) "daylight, period of solar light." Another term for "sun" is found in no. 46.

34. earth: *umba, d-umba-lu*, Ar. *umba*. Cf. Chim. *ama*, Po. *amma, ama, ma*; Moh. *amaḷa*, Dieg. *amat*; Es. *maka-la, matra* (i. e. *maḷa*); Se. *amt*; Chon. *-ama-ts, ma-ts*; Kar. *ma-ruk* "land-ward, to shore"; Was. *ṇauwa* "earth" (< **ma-wa, *amu-wa*; cf. *d-aṇa-l* "house"; Sh. *amma, ṇi-* "with the

- head": Chim. *me-*, *-ŋa-wa* "besides": Hokan **-ma* "with, also," see no. 114). Hokan **ama* "earth, land" may, further be ultimately identical with or related to Hokan **ma* "place, there": Yan. *-ma-* verb suffix "there, at that place," *-madu* "place of"; Chim. *-ma*, *-mu* suffix for place names; S. W. Po. *ma-li* "there, place"; Sal. *ma-*, *um-*, *t-um-*, *t-uma-* locative prefix "place where, whither." If **ama* "earth" and **(u)ma* "place" are identical, Sub. *u'mba* "earth" and Sal. *uma-* "place" may be direct reflexes of Hokan **uma-* "earth, locality," while **ama-* may be assimilated from this form; perhaps **amwa* is to be assumed, with *mw* to Sub. *mb*.
35. earth: *ba'i-lu* "on the ground"; Tlap. *bayi* "earth." Cf. Yan. *bi'-wi* "earth, soil" (*-wi* is collective as in *wawi* "house," *'iwi* "firewood"); Sal. (Migueleno dialect) *t-apaiye'* "dust," (Antoniaño dialect) *t-c-ayiya* (from **-apiya*; in this dialect *p* often disappears and *p'* becomes *'*). Hokan **apai-*?
36. fire: *a'gu'*, *d-a'gu-lu'*, Sq. *ahku* (i. e. *a'ku* probably), Ar. *agu*, Br. *agu*. Cf. Yan. *'au-na*; Sh. *a'wa* "wood," New River Sh. *ga-'au* "wood," Ats. *ahawi* "wood," Chim. *hau-na* "tinder" (from "fire-wood"); Es. *a-nix* "fire" (stem *a-*); Moh. *a'auwa*, Dieg. *a'u*, Yuma *au*, Kiliwi *aau*; Sal. *t-a'au'*. Hokan **(a)'awa*.
37. flower, bloom: *di'i*; also *di'i* "cortés, tree with beautiful white blossoms." Cf. Chim. *atre'i* "flower," i. e. *aŋe'i*.
38. grass: *d-aca-lu'* Cf. Was. *hos-pi*; Ats. *qussi-dr* (read *xussi-d?*), Sh. *xutsi-d*. Hokan **axwasi*? Perhaps Sub. *-aca* is to be read *-a'ca*, *-axca*, assimilated from older **-axci* < **-ax'si-*. But *d-aca-lu'* is related to *ma'ca* "green" (see no. 88).
39. leaf: *i'na*. Sq. *i'na*. Ar. *ina*. Cf. Sal. *c-tan'*, plur. *s-tana-nel* (*c-*, *s-* before consonants is clearly prefixed and may be eliminated as nominal prefix morphologically parallel to *t-*, *t-*; cf. Sal. *c-ka'k'* "crow": Yan. *ga gi*); Chim. *hita-aa'i*, *tahal-wi*. Hokan **itana*? (Sub. *ina* to be read *inna*, assimilated from **itna*?)
40. moon: *uku'*, *d-uku-lu'*, *d-u xku-lu'*, Ar. *d-uku*, Br. *d-ukku*; compounded as *-ku'* in *imba-ku'* "one month." Cf. Chum. *axwai* (San Buenaventura dialect), *owai*, *awai*, *t-awa*. Hokan **axawa-*, **uxawa-*?
41. mountain: *aŋwa*, *aŋgwa*, Ar. *a'na*. Cf. Chim. *awu*, *aumi-ya*, *a'ma*; Po. *d-ano*, *d-ono*, *k-ano* (*k-no*); Maratino (J. R. Swanton, *American Anthropologist*, N. S., 17, p. 38) *ka t-amu-gni* "to war on the mountain." Hokan **aŋwa*? (for Sub. *ŋw*: Chim. *w*, cf. also no. 16).
42. night: *m-i-du'u'*, *m-i-du-lu'* (adjectival derivative in *m-*, cf. no. 123), Sq. *m-idagina* "black." Cf. Coa. *tako-m* "night," perhaps also Atakapa *te'gg*. Coahuiltecan-Subtiaba **itak(u)*?

43. seed: *ia'xa*. Cf. Sal. *ayexteya* (with collective *-te-* infix in older **ayaxaya*, with peculiar type of final reduplication? cf. Sal. *t-icxepip* "feet" with *-l-* infix from finally reduplicated **-icxepip*), older stem (a)*yaxa* probably retained as *ya'ha*, *yaxa* "frijol"; probably also in Chim. *ama-ya'qa* (read *-ya'xa?*) "sand," literally "earth-grains." Hokan **ayaxa?*
44. sky, above: Sq. *d-ehma-lu*. Ar. *d-ehma* "en haut," Sub. *na-gi'ma* "to mount" (see no. 60; for *g-* prefix of *gi'ma*, see no. 124); perhaps also Tlap. *mi-* of *mi-xkwi* "sky." Cf. Es. *imi-ta* "sky"; Moh. *ammaya*, Dieg. *ammai*; Chon. *emaa*; Sal. *l-ema*, *t-em* "sky," *l-e'mo* "over, on, above"; Se. *ami-me*; Yan. *'ap'-sa*; Chum. *al-apa*, *hal-acpai*; Chim. *tc-emu*; Ach. *ts-amiki*; Com. *ape-l*. Hokan **imu* (**i'ma*)?
45. stone: *si'-nu*, *si'x-nu*. Sq. *isi'*, *isi'-nu*, *i'si* "stonē, flint," Ar. *si'-nu*; Tlap. *istci*. Cf. Kar. *aca* "rock"; Sh. *itsa*; Es. *ciefe*; Sal. *t-cxa'*, *cxa'p*; Chum. *xö'p*; Po. *xabe*; perhaps also Chim. *qa'a*, *kaa* (if to be read *xa'a*). Hokan **ixa'*, **ixa'-pi* (Sub. *isi'* assimilated from **isa'* from **ixa'*)?
46. sun: *d-axka'-lu'*, Sq. *ahka*, Ar. *ahka*, Br. *d-aska*; Tlap. *axka*. Cf. Se. *tahx*; Ton. *taxa-c*, *taga-c* "day"; perhaps also N. E. Po. *-daka* in *ma'i-daka* "day-sun" (though this may belong rather with *da*, *hada* "sun" of other Po. dialects). Sub. *axka* is probably related to *nc-yaxka* "to shine," hence *d-axka'-lu'* may be properly "the shining body." Hokan **taxa(-ka)* "sun" is, then, perhaps an old nominalized form in *t-* (see no. 120) from a verb **axa(-ka)* "to shine (of sun, moon)"; **axawa* "moon" (see no. 40) may be related to this.
47. tree, wood: *i'ci*, *i ci'*, *d-i'ci-lu'*, Sq. *i'ci*, Ar. *ici*; Tlap. *itci* "tree." Cf. Chon. *ehe*, *kal-eke* "wood, tree" (*kal-* is nominal prefix, see no. 106); Se. *ehe*; Kiliwi (Yuman) *xai-pak*; Po. *ahai*, *hai*, *xai*; Com. *xai*. Hokan **ixai?*

D. Cultural Objects

48. axe, hatchet: *a'xwa*, Ar. *ah-nu*; probably also compounded with *si-* "stone" (see no. 45), assimilated to *sa-*, in *sa-x-nwa* (or *s-ax-nwa*) "copper, axe (of metal)," *s-ax-nwa-lu* "iron, machete," originally "stone of axe, material of axe," hence later "copper, iron" and "axe of copper, iron." Cf. Chum. *owa*, *u'wu* "knife" (from **axwa?*; cf. no. 40); possibly also Was. *ta'wi*, *ta'wi* "knife" (read *ta'wi?* but *t-* is not here equivalent to nominal *d-*, as is shown by possessive forms like *di-ta'wi* "my knife"). If these Chum. (and Was.) forms are not to be understood as having *-w-*, they can hardly be compared with Sub. *a'xwa,ax-*, and are more likely to belong with Hok. **awai* "stone" (see *Hok.-Coa.*, no. 51).

49. bow: *d-i-ci-lu-*. Cf. Chum. *t-axa*, *ax*; Sh. *xau* (doubtful because ordinarily Hokan *x* appears as Sh. *s*, *ts*, while Hokan *x* appears as *x*); Sal. *p-axuwe* (same difficulty as for Sh.); Ton. *nixau* (if analyzable as *n-ixau*); Com. *xai*; Kar. *gai*. Hokan **ixai*? (For phonology cf. Hokan **ixai* "tree, wood." no. 47. It is possible that there are two distinct stems here: **ixai*, cf. Sub., Ton., Com., Kar.; and **axau*, cf. Sh., Sal.; Chum. might belong to either. But it is more likely that they go back to one source and that **ixai*, **ixau* was in some dialects shifted to *ixai* because of palatal position of *i*.)
50. house: *gwa*, *gwa-lu-*, Sq. *gua* "house, hut." Ar. *gu'a*, *iwa-*, Br. *gua*; Tlap. *gugua*. Cf. Yan. *wa-wi-*, *-wa*; Chim. *awa*; Es. *iwa-no*; Moh. *awa*, Dieg. *awa*; perhaps also Chum. *p-awayic*; Com. *wa-mak*. From Hokan **iwa*, **awa*, **wa*. I prefer to keep apart Hokan **ama* "house" (see Was., pp. 106, 108), though it is quite possible that these stems go back to one source; for Sub. *gw* from *w*, see Phonology.
51. road: Tlap. *is-kamba* "camino real, highroad" apparently compounded of *is* and *kamba* "road" (cf. Sub. *gamba* "road, street"). If *is-* is to be taken as meaning "trail" (Indian trail as contrasted with road?), which is far from certain, it may be compared with Chim. *hissa* "trail"; Yan. *i'ya*; Ach. *i'de*; Po. *hida*, *da* "trail, door"; Tonto (Yuman) *inya* "trail." Hokan **itya* (**izya*)?
52. shirt: *eme* "camisa de mujer," *me-xn'ya* "shirt, huipil," *mi-i-da* (= *mi-i da*?) "camisa de hombre." Ar. *mi-da-xuberu* "veste de coton." Cf. Yan. *mi-wi-*, *-mi* "hide, blanket"; Tonto (Yuman) *ya-mia* "skin, hide." Yuman *-mi*, *-me* "hair" in Moh. *iavu-me* "beard," Dieg. *ale-mi* "beard" (cf. Moh. *i'ya*, Dieg. *'a* "mouth"); Chim. *hima* "hair"; Com. *emo-l* "skin, hair on body"; Sal. *l-emi* "rabbit-skin blanket" (for *l*-prefix in Sal., cf. no. 44), *cl-emi-y'a* "coat"; perhaps also Was. *ts-ime-l* "beard" (for nominal type *ts- . . . -l*, cf. *ts-iga-l*, no. 15); Po. *ts-i'me* "hair, fur." Hokan **ima* and **ami*, assimilated **imi* "hair, fur, skin, hide, blanket, coat"?
53. string: *un'yu*, *d-un'yu*, *d-u-un'yu*, *d-u-n'yu-lu-* (read *unn'yu*?). Cf. Sh. *imme* "sinew" (from **ipme*). Ach. *pim*, Ats. *ippiu* (from **ipm'yu*); Yan. *ba'ma* "sinew." These forms seem to reconstruct to **ipamu*, whence, in Sub. **ipmu*, **imm'yu*, assimilated to *unn'yu* (cf. nos. 7, 10, 25).

F. Personal Nouns

54. child: *-ku-*, *-ku* in *se-ku-* "child," Sq. *sa-ku-le* "son," *sai-ku-la* "daughter," *ni' ku-yu-* "my son-in-law," *gu-ku-yu-* "my daughter-in-law" (*-yu-* "my"; *gu-*, *-gu* "female," e. g. *gu-n'yu ni* "young woman" *gu-mba* "old female," *ra'ba-gu-*

- "woman"); Tlap. *-gui* in *gu-gui* "daughter-in-law." Cf. Tonto *ko-tye* "small"; Es. *oxu-s-k*, *uku-s-k*, *uku-s* "small, infant"; Po. *-ku* "son, daughter," *ku-* "boy, girl infant," *ku-ts*, *ku-tc* "small," *ku-s* "infant," *kawi* "small, infant, boy"; Chum. *ku-tco*, *gu-nup* "child"; Ton. *-xun* in *ca-xun* "small," *wi-xun* "girl"; Cot. *kuwo-sam* "small, young"; Kar. *kwa'n*, *kwaan* "small, young." Hokan **k'u* "small, child"? Sub. *seku* "child" may go back to **isa-k'u* (see Phonology) and correspond to Ton. *ca-xu n* "small."
- 54a. man: *r a'bu* "person, man" < **r a'ba-k* (see Phonology, for *r* prefix see Morphology), *r a'ba gu* "woman" (literally "man-female"). Cf. Es. *efe-hi* "people"; Po. *ba*, *ba-ia* "man." Hokan **ipa*?
55. mother: *d-u'tu*, *d-u'tu-lu'*, compounded as *du-* in *du-ri-n'ya* "mother-old, grandmother," Sq. *aulu* "mother," Ar. *d-utu*, *d-uta* ("my, thy mother"); Tlap. *r-utu* "my mother," *r-uta-lo* "our mother." Cf. Chum. *tuyu*, *tuq* "mother"; Kar. *ita*, *ta-t*; Ach. *da-tyi*; Yuman **tai* in Moh. *hin-tai-k*, Dieg. *tai-l'*, Yum. *ta-l'ye*, Cochimi *ka-tai*; Coa. *tai*; perhaps also Was. *-la*. Hokan **uta-*, **utay*?
56. sister: *se-ka*, perhaps from **isa-ka* (cf. no. 54). Cf. Was. *-i'sa* "older sister"; Es. *itci* "sister"; Sh. *atcu*, *atci* "older sister"; Ach. *ab-is* "older sister" (*ab-* probably as in *w-ab-aii* "older brother"); Kamia (Yuman) *esan* "younger sister," *intca-tcan* "older sister" (for *intca-* cf. *intca-mal* "older brother"), Cocopa *hidj-isa* "older sister," S. Dieg. *intca-itcan* "older sister," *sal* "younger sister," N. Dieg. *etcan* "older sister," *esan* "younger sister." From these forms Hokan **isa* "sister" may be inferred.

F. Verbs

57. be: *-tsu* in *iku' ci'-ni'-tsu* "I am, dwell" (*iku'* "I;" *ci'-ni'* perfective, hence properly "I have sat down"). Cf. Yan. *dj t-* primary verb stem "to sit, dwell;" Chim. *-tcu-* "to lie on ground, sleep;" Sal. *-atce-* "to sit" (*k-atce-k* "to sit down," *t-atce-x* "seat"); perhaps also Es. *k-oso-* "to sit down."
58. beseech: *-waa* in *na-waa* "pedir" (*na-*, in this and following examples, is present tense prefix). Cf. Yan. *-wa-*, *-wa'* secondary verb stem "to weep;" Chim. *-wo-* "to cry;" Ach. *-wo* "to cry;" Coa. *wa'yo* "to cry;" Karan. *owiya* "to cry."
- 58a. bring: *-g-aya'a*, *-yaa* in *na-gaya'a* "to bring, drag." *iku' gi'-n'ya* "I have brought" (properly "I have been brought"? *gi'-* is passive participial) < **ni-yaa* (*ni-* is preterital), also *-g-a'ya* in *na-ga'ya* "to have, hold, carry" (for *g-* prefix, see Morphology). Cf. Sal. *p-aye-m* "to carry, bear" (for transitive *p-* see Morphology); C. Yan. *'ai-* "to carry." Hokan **aya-*?

59. burn: -*g-amo* (used of fire) in *na-gamo* (for *g* prefix see Morphology.) Cf. Chim. -*maa-*; Ton. *mai*; Com. -*makua*.
60. climb: -*g-i-ma* "steigen" (*g*-prefix as in no. 59); cf. corresponding nominal form *d-ehma-lu* "sky" (no. 44). Cf. Yan. *ma-* "to climb."
61. come: -*a*, -*aa* of *na-a*, *n^y-aa* (probably from *ni-aa*; *ni-* is preterit). Cf. Chim. -*a* "to go"; Yan. '*a*' "female goes." But *iku ni-naa* "I came" and *iku ci-ni-naa* "I have come" seem to indicate Sub. -*naa* as stem; these forms are perhaps remade from present *na-a*.
62. come: -*tca* in *na-tca*. Cf. Yan. *dja*-primary verb stem "to proceed, move" (see Yan., no. 31); Po. *tca*, *tca-k* "to run."
63. come: -*ky-i* in *na-ky-i*. Cf. Yum. *ki-ri-k*, Dieg. *kiyu*; Coa. *kal*; Karan. *kas*, *ka's*; as secondary stem also in Yan. -*k'i* "hither"; Chim. -*k* (e. g. -*wa-k* "to come," cf. -*owa* "to go"); Was. -*u-k* "toward the speaker" (cf. -*u-e* "from the speaker"); Sal. -*x* (e. g. *ia-x* "to come," cf. *ia* "to go"); Com. -*k* in *ya-k* "to come." Hokan **k'wali* "to come," as secondary stem reduced to *-*k'(w)i*?
64. cry: -*mbi-ya* in *na-mbi-ya*; simpler stem -*mli*, *embi* preserved in *emli* "owl." Cf. Yan. *mi-* "to cry, wail"; Po. *mi-na*, *mi-n-wen*, *mi-mai* "to cry," Tonto *mi* "to cry, scream, sigh," Moh. *himi-n* "to cry, lament"; Sal. '*ame-s*, *ama-s* "to shout, to cry." Hoken **ami*, assimilated to **imi*?
65. die: -*ga-n^yu* in *na-gan^yu* (for *g* prefix, see Morphology; -*n^yu* from **inu* * < -*imak* or **imax(w)*?). Cf. Es. *moho* "he died"; Sal. -*ama-* in *c-am-tet* "corpse," *p-ama-t* "to die," *a-m(k)* "to kill"; Yan. *am'dji-* "to kill"; Chon. *maa-* "to kill."
66. drink: -*n^ya* in *na-n^ya* (from **ima*, cf. no. 7). Cf. Wash. *ime* "to drink," nominalized as *d-ime* "water" (from **ima*; Washo *e* regularly results from *a* when preceded by *i*); Es. *imi-la* "sea"; Chum. *ma*, *tc-l-imi* "stream," possibly also *s-x-ami* "ocean" (note that *ma* and *tc-l-imi* can only be reconciled by assuming **ima*, which is precisely what Sub., Was., and Es. independently lead to). Hoken **ima* "water, to drink"?
67. eat: -*iu* in *g-iu*, *g-iu'* (intr.). Cf. Was. *iw*, *eu* "to eat" (tr.); Po. *wa* (with plural object). Hoken **iwa* "to eat" (tr.; intran-sitivized in Sub. by *g*-prefix, see Morphology)?
68. go: -*xka*, -*ska* in *na-xka*, Ar. *na-ska*. Cf. Ton. *va*; Coa. *ka-l* "to go," *ka-i* "to walk"; perhaps also Sal. *ica*, *ica-k* "to go, to walk" (<Hokan **ia-a*?).
69. go: *a-yu*, *a-ya* "go!" Ar. *a-ya* "to come." Sq. *aiyu* "to go," perhaps also -*d-ia-* "to cause to go" in *na-dia-ma* "to place" (<to cause to go with"?, for *d-*, see no. 125; for -*ma* "with," see no. 114). Cf. Sal. *ia*, *ie* "to go," *ia-a* "to come"; Es. *iyu* "to come"; Was. *iyu* "to walk, go," perhaps also

- aya "to move running," ya-*ni* "to run (plur.);" Ton. ya-*ku*- "to go"; Karan. *ye*.
70. go: -*g-a'u* in na-*ga'u* "to go," *ci-ni-ga'u* "ya se fueron"; also *g-a'wi'*, *g-a'gwi'* in na-*ga'wi*, na-*ga'gwi* "to flee, go away" (for *g-*, see Morphology). Cf. Po. *wa*, *wa-l* "to go, walk"; Chim. -*owa-*, -*wa-m-* "to go," -*wa-k-* "to come"; Kar. *va-r(-am)* "to go"; Was. -*u-* as secondary stem in -*u-e* "from the speaker," -*u-k* "toward the speaker," -*wa-* secondary stem "to go" (e. g. *baaci-wa-a* "he went in"); Ton. *wa-na* "they go"; Cot. *awo-yo* "go over there!" Karan. *wa-na* "go away!" At. *wa-n* "to go." Hokan **awa* "to go away" (note parallelism of Sub. *g-a'u*: Hokan **awa* and Sub. *g-iu*: Hokan **iwa*, no. 67)? From this Hokan stem is perhaps formed also **awa* as postposition "away from": Po. -*awa* "from"; Was. -*uwe* "from."
- 70a. lack: *d-a'wa*, *d-agwa* "there is not" (properly "to have lacking"; for *d-* see Morphology). Cf. Sal. *k-awa* "to be lacking": with intransitive *k-* prefix; Yan. *w-wai-*, *wa'-wai-* "to miss" (-*wai-* secondary verb stem "to perceive").
71. laugh: *ndiegu* in na-*ndiegu*. Cf. Sal. *ilik*; c. Yan. 'alai- "several laugh."
72. make: -*da* in na-*da*. Cf. Sal. *cta*, *cta'*.
73. peel: -*di'i* in na-*di'i* "to peel (fruits)." Cf. Yan. *de-*, static *di-* "to peel, shear."
74. pour: -*ykwa* in na-*ykwa* "to pour out, strew out." Cf. Chim. -*qo-* "to pour," -*qox-* "to spill" (read -*kō-*, -*kox-* from **kwa-*, **kwa-x-*?).
75. run: -*g-agnu*, -*agal-* in Sq. na-*gag-nu* "to run," *d-agal-ni* "runner" (for nominalizing *d-*, see no. 120; perhaps better analyzed as -*agalni* with -*ln-* as nasalized *l* or some other variant of *l* or *n*). Cf. Yum. *kono* "to run," Dieg. *ganau*; Was. *igelu* (plur.); Po. *gadi*. Hokan **ikulu*, **ikali*?
76. see: -*ya* in na-*ya-nga* (-*nga* probably enclitic pronoun "him"), Sq. *da(i)-ya* (*da-* probably imperative prefix), Ar. *da-(i)-ya*. Cf. Moh. *iyu*, Dieg. *awu*. Hokan **ayu* (assimilated to **aya*, *ya* in Sub.)?
77. sit: -*t-a'u* in na-*ta'u* (for factitive *d-*, *t-* prefix, see no. 125). Cf. Yan. *wa-*; Chim. -*wə-* "to sit," *wa-* "by sitting on"; Ats. *wə-* "by sitting on"; Tonto *oa* "to sit," Wal. -*ua*, Kiliwi *owan*. Hokan **awa* "to sit" (older Sub. **t-awa* "to make sitting, have as seat")?
78. sit: -*a mo*, -*a ma* in *k-a mo* "to sit" (for *k-*, *g-*, see Morphology), *k-a ma goo-yu* "estoy sentado en la casa." Perhaps originally "to dwell" as denominative from Hokan **ama* "house." Cf. Was. *d-ana-l* "house," *ana-l* "to live"; Chum. *ma-'m* (or *m-a'm*) "house"; Sal. *t-a'm*, plur. *t-ama-nel*, *t-a ma'-ten*, as denominative verb *k-ma-i* "to live, possess home" (properly "to be housed"); Sh. *amma*. Hokan **awa*

- "to sit" (no. 77) may also well be derived from **awa* "house" (no. 50).
79. sleep: Sq. *ami*. Cf. Sal. *me*; Com. *n-eme-t*; Karan. *im*; perhaps also Was. *ma-ca-m* "to lie (sing.)," *maya-c* "to lie (plur.)." Hokan **ami* (**imi*) or **amay-*?
80. sleep: *-apo*, *-apu*, *-apa* in *g-apo* "to lie (in sleeping)," *na-gapu* "to sleep" (for *g*-prefix, see Morphology), *iku na tcu ma-da-pa* "I shall sleep" (literally, "I go with sleeping"). Cf. Chim. *po-*, *poi-* "to sleep"; Chum. *k-opok* "dead"; Es. *poko-* "to sleep"; Sal. *p-apa* "to copulate" (old transitive in *p-*: "to lie with, have one lie").
81. sleep: *-gu* in *na-gu*. Cf. Sal. *kau*, plur. *kaxau*; Chum. *ukwe*. Hokan **ukau*?
82. smoke: *-s'i'xa* in *na-si'xa*, *na-s'i'xa* "to smoke." Cf. Po. *tsaxa*, *saxa*, *saha* "smoke"; Es. *tcaxa* "smoke"; possibly also Yan. *tc'e'kau-na* "smoke"; Sal. *ts'opo* "fog."

G. Adjectives

84. alone: *mi'no*, *mi'na'u* "alone, self." Cf. Was. *mi'le* "all (from **mi'na*?" Hokan *n* seems not infrequently to appear as Was. *l*, e. g. *l-* "I" < **n-*).
85. big, fat: *umba* "big, fat," *ombo* "big, strong, thick," *-mpa'u* "big, thick," as augmentative suffix *-mba* (e. g. *a'x-mba* "old, mature" of males, *gu-mba* "old, mature" of females), Sq. *ump'a* "great," Ar. *umba* "fat." Cf. Ach. *äphau* "fat" (adj.); Chim. *-xu-* (from **-p'u-*) "fat" (adj.); Yan. *p'ui-* "to be fat"; Po. *pui* "greasy"; Sal. *upent* "fat" (n.). Hokan **up'awi* "fat, stout"?
86. full: *m-a'xni* (for *m*-prefix in adjectives see Morphology). Cf. E. Po. *minam* "to be full, fill"; Yan. *b-a'ni-* "to be full" (for *b*-prefix in adjectives see Morphology). Hokan **m-a'ni-*, **p-a'ni-*?
87. good: *m-i'xna* (with *m*-prefix as in no. 86). Cf. Ton. *hinox*; Cot. *k-enas* (for *k*-prefix see Morphology); Was. *a'xau*, *t-a'xau*; (*-ŋ-* from *-xŋ-*?) Sal. *p-inxa* "good, successful (thing)" (for *p*-prefix see Morphology; *-nx-* from *-xŋ-*?); Moh. *ahx-t* "good," *ta-ahana* "real, good," Yum. *axo-t* "good," Dieg. *axan-n* "good" (Yuman **axana-t*?) Hokan **ihna-xu-*, **ixana-*?
88. green, blue: *m-a'ca* (with *m*-prefix as in no. 86), nominalized in *d-aca-lu* "grass (sacate)," Sq. *maca* "green," Ar. *maca* "green"; Tlap. *matca* "green." Cf. Se. *ko-masso-l* "brown," *mosso-l*, *k-maso-l* "yellow"; Chim. *himamsu-t* "green, blue, yellow" (reduplicated from **-masu-*); Sal. *t'a-mas* "grass" (nominalized from adjectival form **masa* instead of directly from radical **asa* as in Sub.), perhaps also *ca-* (from **asa-*) in *ca-xa'-NE* "blue." Hokan **asa-*, **asu-*, perhaps related to **axwasi*, **ax'usi* "grass" (see no. 38)?

89. high: *m-i-si'ta* (with *m-* prefix as in no. 86). Cf. Sal. *-esu-*, *-usu-* in *k-usu-lulna* "straight (tree)" (from "high-straight"? cf. *k-atu-lulna* "straight [road]"), plur. *k-esu-lu-ti-na*.
90. large: *d-a'gu* (with *d-* prefix, see no. 121). Cf. Chon. *kweka*; Se. *k-ako-l* (for *-l* cf. adjective forms in *-l* in no. 88); Ton. *kwalo* "great"; At. *kome* "great"; perhaps also Sal. *k-a-xwen* "much." Hokan **aku*, **akwa*?
91. little: *tei-tei* "little, younger brother," *r-i-tei* "little," diminutive *-tei* (e. g. *i'ya-tei* "water-little, brook"), Sq. *teitci* "small, child," Ar. *tei-tei* "little." Cf. Chum. *teitci* "child"; Po. *b-itcu*, *k-itci-du* "small"; as affixed element in Kar. *-itc* diminutive noun suffix; Po. *-ts*, *-tce*, *-tse-n* in relationship terms; Chum. *-itc-*, *-its-* (e. g. *ma-k-itc-tu'n* "my son," literally "the-my-little-son"); Yan. *-is-gi*, *-lse-gi* diminutive plur. (also C. Yan. *'tce-gi-* "to be small"); Was. *-tsi-* in *behe'-tsi-ŋ* "small."
92. old: *axa*, *-aha*, *a'x-* in *seku' axa* "muchacho grande," *na-xka d-aha* "to grow" (literally "to go to maturity"), *a'x-mba* "old" (for *-mba* see no. 85), *m-a'x-* "more" (for *m-* see Morphology). Cf. Chim. *xawi-ni*, *hahawi-n-ta'* "old"; Yan. *-a-* in *m-a'-tsk'i-* "feathers are old, worn out," *m-a'-tsk'i-lil-la* "buzzard" (for *m-* see Morphology); Chum. *xax* "large."
93. raw: *ma'ca* "raw (meat)" (there must be some phonetic difference between this word and *ma'ca* "blue, green," no. 88, perhaps of tone, for Lehmann accents "raw" as *ma'ca'*, but "green" as *ma'ca'*; perhaps to be understood as *ma'ca*, cf. Yan. *-su-i-*, Po. *tas*, *kasi-*, *kis*, and Sal. *matse-* below). Originally "red"? Cf. Cham. *masomas* (red.) "red salmon"; Sal. *matseko'*, *matseko* "chipmunk"; n. Yan. *-ra-psi-*, *-ra-psu-i-* "red" < **da-msu-i-* (probably incorporated form in *-i-* of old nominalized form **da-msu* or **d-amsu*); Com. *(pa-)mso-l* "red"; Cot. *msa-ε* "red." Hokan **masu* (**ma'su*?) contains adjectival *m-* (see no. 123). Primary **-a(')su-* "red, raw" is found also in Yan. *-su-i-* "raw, unboiled, unripe" (incorporated element, with lost initial vowel, in *-i-* in verb forms); Chum. *uks-* (misheard as *u's-* from **a'su-*?) in *uks-tai* "red"; Was. *dal-coco-ŋi* "red" (*dal-* is color-adjective prefix; *-coco-* reduplicated from *-co-* from **-asu-*, with *u* umlauted to *o* by preceding *a*?). With *t-* prefix also in Chum. *t-asu-n*, *t-ase-n* "red"; Po. *t-as* "red" (from **t-a'su*?). With *k-* prefix in Po. *k-'is* "red"; *k-'asi-l*, *k-asi-l*, *x-asi-l* "redwood."
94. ripe: *nego*, *neezo* (this orthography points to *ne'go*; < **.na-*?). Cf. Sal. *k-nap*; Chim. *-m-ana-t* (read *-a'na-*?) "ripe" in *xo-manat* "unripe" (for *m-* see Morphology), but cf. *ho-mat* "ripe." Hokan **i'na-*?

95. sick: *-nd'yu* in *na-nd'yu*. Cf. Yan. *m-a'd:* "to be sick" (for *m-* see Morphology).
96. sour: *m-i'ka* (with *m-* prefix as in no. 86). Cf. Yan. *kai-* to be bitter; strong in taste"; Chim. *qoiyo-in* (read *koyo-in*?) "sour." HOKAN **ikay(a)*?
97. sweet: *m-i'ta'u* (with *m-* prefix as in no. 86). Cf. Po. *-itau*, *-itu* in S. Po. *kodi-bitau* "sweet" (for *b-* prefix see Morphology), S. W. Po. *tuitu* (reduplicated with loss of *i-*, originally **itu-itu*; cf., for similar parallelism of forms, N. Po. *tcado-l* "round": E. Po. reduplicated *tcodotcodo-k*).
98. white: *m-i'ca* (with *m-* prefix as in no. 86; cf. *t-i'tcu* "white," *-g-i'ca* in *di-gi'ca* "white hair"), Sq. *mica*, Ar. *mica*; Tlap. *mitca*. Cf. Moh. *nya-masa-m*, S. Catalina *imica-pa*, Kiliwi *umesa-p*; Ton. *mas-lak*; Cot. *meso-i*; perhaps also Es. *matshai-ba* "white people." HOKAN **m-isa*?
99. yellow: *moɣmo* (red.) "yellow," *-mu'xi* "to paint" in *na-mu'xi*. Cf. Yan. *-mu'du-i* "yellow" (incorporated element in *-i-*, cf. no. 93), probably derivative of *-mu'*, *-mux-*; perhaps also Sal. *k-umtica* "brown."

H. Numerals

100. one: *i'mba*, *imba*, Sq. *imba*, Ar. *imba*, Br. *imba* (from **ipa*? cf. nos. 8, 85). Cf. Yan. *bai-*; Es. *pek*; Chum. *paka*, *pake-t*; Ton. *pax*, *paxaa-tak* "alone. only"; Chim. *po-la* "alone" (*-la* is diminutive). HOKAN **ipa(ki)*?
101. two: *a'pu*, Sq. *apu*, Ar. *apu*, Br. *apu*. Cf. Kar. *axak*; Sh. *xokwa*, Ach. *hak*, Ats. *hoki*; Chim. *xoku*; Yan. *u'-*, *ux-*; Po. *ako*, *ko*, *xotc*, *xos*; Moh. *havik*, Cocopa *howok*, Kiliwi *xuak*, Dieg. *xawok* (HOKAN **ɣwa-* becomes dissyllabic Yuman **xawa-?*); Sal. *xaki-c*, *kake-c*, *kak'-cu*; Se. *k-uxo-m*, *k-axku-m*; Chon. *oke*; Es. *xulax* (with inserted *-l-* indicating plurality-duality or distribution?); Was. *heske*; Ton. *ake-tai*; Coa. *ax-te*. These forms go back to HOKAN **axwa*, **axwaku* (**axwasku*?).
102. three: *a'su*, Sq. *asu*, Ar. *asu*, Br. *assu*. Cf. Sh. *xatski*, Ach. *icadi*; Chim. *xodai*; Was. *helmi-ŋ* (with inserted *-l-*, cf. Es.); Po. *xom-ka*, *xoxa-t*, *kutc'a-ka*; Es. *xulep* (with inserted *-l-* as in no. 101); Moh. *hamo-k*; Se. *k-axpa-m*; Chon. *afa-n*; Sal. *kłapai*, *łapai(t)*. These forms are all based on HOKAN **axwa-* (cf. no. 101); for explanation of individual forms see note after no. 103.
103. four: *axku*, Sq. *aku*, Ar. *axku*, Br. *asku*. Cf. Was. *hawa*; Es. *xama-x*; Chim. *qu'igu* (read *xu'i-gu*); Tonto *hoba*, Wal. *hoba*, Cochimi *hopa*, Yavapai *hopa*, S. Catalina *hopa*; Ach. *ha'-da'ma*; perhaps also Sal. *k'ica* (from **ɣwaxwa* or **k-(a)ɣwaxwa*?). These forms too are based on HOKAN **axwa-* (cf. nos. 101, 102); for explanation of individual forms see following note.

NOTE TO NOS. 101-103. It is remarkable how much the Hokan numbers for 2, 3, and 4 resemble each other. The following table shows the parallelism at once:

	2	3	4
Chim.....	<i>xok'u</i>	<i>xodai</i>	<i>xwigu</i>
Sh.....	<i>xokwa</i>	<i>xatski</i>	
Ach.....	<i>hak</i>		<i>ha'da'ma</i>
Po.....	<i>ako, ko, xo-</i>	<i>xoma, xoxat</i>	
Es.....	<i>xulax</i>	<i>xulep</i>	<i>xamax-</i>
Moh.....	<i>havik</i>	<i>hamok</i>	<i>hoba</i> (Wal.)
Sal.....	<i>kakec, kak'cu</i>	<i>klapai</i>	<i>k'ica'</i>
Was.....	<i>heske</i>	<i>helmi-η</i>	<i>hawa</i>
Se.....	<i>-axku-</i>	<i>-axpa-</i>	
Chon.....	<i>oke</i>	<i>afan</i>	
Sub.	<i>a'pu</i>	<i>a'su</i>	<i>a'ku</i>

The resemblances are even closer than they appear to be; dialectic Pomo *ako, ko* (i. e. *ak'o, k'o*) goes back to *axo, xo*, Yuman *ho-* of *hoba, hopa* "four" is probably labialized from *ha-* because of following *-b-* (from *-w-* or *-xw-*, see below), and Washo *he-* and *ha-* are equivalent elements, *a* regularly changing to *e* when followed by *i* or *e*. There seems only one reasonable explanation for these curious parallelisms and that is to assume that they are due to etymological relationship. If "two" (Hokan **axwa*, less probably **uxa*) be taken as starting point, "three" will have to be explained as "two plus" or "two and one," "four" as "two and two." A close analysis seems to bear out this hypothesis. At the same time the various ways in which the idea of "three" may be derived from "two" would account for both the radical resemblance and the tantalizing differences in the derivative suffixes of the Hokan words for "three." "Two" and "four," as might be expected, show much greater conformity to Hokan prototypes. The following table attempts to group the forms on the basis of original structure.

2. (a) Radical element, Hokan **axwa*:

Yan.	<i>u'-, ux-</i>
Po.	<i>ako, ko</i>
Moh.	<i>havi-k</i> , Cocopa <i>howo-k</i> , Kiliwi <i>xua-k</i> , Dieg. <i>xawo-k</i> (with adjectival <i>-k</i> as in Dieg. <i>miyul-k</i> "sweet"?)

Chon. *oke*

(b) Hokan **axwa-ku*:

Kar.	<i>axa-k</i>
Sh.	<i>xo-kwa</i> , Ach. <i>ha-k</i> , Ats. <i>ho-ki</i>
Chim.	<i>xo-k'u</i>
Sal.	<i>xa-ki-c, ka-ke-c</i> (perhaps to be understood as <i>k-xak'i-c</i> , Hokan <i>*k-axwak'u</i> , cf. Seri)
Se.	<i>k-ax-ku-m</i> (for intransitive <i>k-</i> and suffixed <i>-m</i> cf. Se. forms for "three")

(c) With inserted plural *-l-* (cf. frequent use of infix *-l-* in Sal.), **axwala-* or **axul-*:

Es. *xula-x*

(d) With *-s-* suffix, **axwa-s-*:

Po.	<i>x'-s, xo-t</i>
Was.	<i>he-s-ke</i>

- (e) With other elements of less wide distribution:
 Ton. *ake-tai*; Coa. *ax-te*
 Sub. *a'-pu* (from **axwa-pa-k?*)
3. (a) Hokan **axwa-sa-* or **axwa-lsa-* (often with *-k-* suffix):
 Sh. *xa-ts-ki*, Ach. *lca-c-di* (perhaps **xwa-ls-* shifted to **xwa-ls-*, whence, with sibilant development of *x*, *xw* characteristic of Shasta-Achomawi and with glottal metathesis, **lsa-ls-*, **lsa-s-*)
 N. E. Po. *ku-tc'a-ka*, S. E. Po. *xo-xa-l* (from **xwa-sa-* or **xwa-s'a-*; Pomo *s*, *c* generally appears as *x* in S. E. Po., e. g. *xama* "ear," but *cima* in other dialects)
 Sub. *a'-su* (from **axwa-sa-k*, see Phonology)
- (b) With element **ma-* "together with, added to" (see no. 114; cf. Yana numerals like *bai-ma-mi-* "six," literally "one-with [five]-aside"), **axwa-ma-* "two-plus":
 E. Po. *xo-m-ka* (*-ka* as in *kut'e-a-ka* "three")
 Moh. *ha-mo-k* (*k-* as in *havi-k* "two")
- (c) With suffixed **-pa*, perhaps identical with **ipa* "one" (see no. 100), **axwa-pa-* "two-one":
 Se. *k-axpa-m*
 Chon. *afa-n* (from **ax'pa-?*)
- (d) With plural *-l-* inserted in type b or c, **axwa-l-ma-*, **axulu-pai-* (based on **axwa-pai-* "two-one"):
 Es. *xule-p* umlauted from contracted form **xula-pi?*
 Sal. *kla-pai*, *lupai* (from **x'la-pai-*; perhaps to be understood as *k-xla-pai*, Hokan **k-axula-pai-*; note that Esselen and Salinan forms go back to identical prototype)
 Was. *he-l-mi-η* (from **axwa-l-mi-*)
- (e) Hokan **axwa-la-*:
 Chim. *xo-dai* (cf. also Ach. *lca-c-di?*)
4. (a) Hokan **axwa-xwa* "two-two," generally disguised by secondary processes:
 Was. *ha-wa* (dissimilated from **axwaxwa* to **axwawa*)
 Ach. *ha'-* in *ha'-da-ma* (from **axwaxw-*, **xwaxw-*)
 Sub. *a'xku* (from **a'xwagwa-k* < **a'xwawa-k*, cf. Washo; see Phonology; note Sub. *a'-* in "two" and "three" from **axwa'-*, but *a'x-* in "four" from **a'xwa-*)
 Yuman *hoba*, *hopa* (probably dissimilated from **axwa-xwa*, perhaps through **axwa-wa*, cf. Was. and Sub.)
 Sal. *k'ica'* (from **axwa-xwa-*, dissimilated from **axwa-xwa-*, with Hokan *x'xw* shifted to *c*, as regularly, and *-a-* palatalized to *-i-* before *c*; perhaps to be understood as *k-xica'*, Hokan **k-axwa-xwa-*)
- (b) With element **ma-* (cf. type b of "three"), **axwa-ma-* "two-together, set of twos":
 Es. *xa-ma-x-*
- (c) With dual **-w-*, **-u-wi-*, **axwa-ku(-wi)* (see type b of "two"):
 Chim. *xu igu* (read *xu'kuw?*) (this formation would be entirely parallel to Yan. *lal-w-wi* "two feet"; Chum. *ckum-u* "four, two twos," cf. *ickom* "two")

I. Demonstrative, Interrogative and other Pronominal Stems

104. this: *-la* in *ka-la*, *xa-la* "this one," *-la* "this" (e. g. *gwa-ya-la* "this house of yours"), Sq. *ka-la* "this," *endo-la* "this day, today." Cf. Chum. *al-*, *ala-* article (e. g. *al-apa* "sky," *ala-xu'wul* "coyote"); Es. *la-* of *la-l* "he"; perhaps Sal. *-la*, *-l-*, *-l* of *he-l*, *i-l-a*, *i-l-ta* "soon, afterwards"; probably Chon. *l-*, *ka-l*, *al-* noun prefix (e. g. *l-ahutl* "house," *ka-l-ora* "sun," *al-fo'na* "sun"). Here belongs also Sub. *-lu-* (see no. 122).
105. this, that: *ta-* demonstrative stem in Ar. *ta-ka* "celui-ci, celui," *ta-lu* "celui-là." Cf. Yan. *da*, *-da-i-*, *a-dai-*, *a-dai-ri* "that"; Po. *te-* in *te-ya* "those people"; Chum. *i-te*, *tu-yu* "this"; Se. *i-ta-m* "he, that"; Kar. *ta* adverbial particle preposed to verb forms indicating "probably indefinite or imperfect time"; Was. *da-*, *de-* "his," *d-i-* "him-I" (in verb forms), adverbial particle *da*, *-da* (e. g. *ic-da* "and then," *i-da* "thereupon"); Sal. demonstrative particle *-ta*, *ta-* (e. g. *i-l-ta* "soon," *na'-ta'*, *ta-na*, *ta-ha*, *ta'* "now"); Ton. *te-l*, *ta-ka*, *wa-ta-c* "that, this"; Coa. *ta* "that, the"; Karan. *ta-l* "that, he." Related to Hokan **ta* "that" is probably *t-*, nominalizing prefix (see no. 120).
106. that, he: *ka-* in *ka-la* "this one," *ka-gi* "eso," *ka-gi-nu* "esos," *-ka* (*-nga*) in *i-ka*, *i-nga* "he," Sq. *ka-* in *ka-la* "this," *ka-gi* "that"; perhaps also *ga-* verb prefix indicating futurity. Cf. Ton. *-ka* in *ta-ka* "that, this"; Chum. *ka-*, *go-* in *ka-i*, *ka-ki* "this," *go-lo* "that"; Chon. *ka-l-* noun prefix.
107. that (past): *di-*, *di-* in *di-ci-i* "yesterday" (literally, "that [past] day," cf. no. 33), Sq. *di-ci*, Ar. *di-ci*. Cf. Was. *di-* "there (distant)," *di-di* "that (distant)." Perhaps related to no. 105.
- 107a. this: *i-* general demonstrative stem of nearness: *i-nga*, *i'-ka* "he," *i-ku* "I," *i-ka* "thou" (note that "I" and "thou" are based on general third personal *i-ka*. see no. 106, as Yan. *ai-nidja* "I" and *ai-numa* "thou" are based on *ai* "he, the"), *ε-nyu* "they" (from **i-mak*, see Phonology; *-inyu*, *-nyu* used as personal plural), *i-ngi* "near" (based on *i-nga* "he, it," perhaps from **i-ka-t* "this-at"), *nva* "and" (from **i-má* "this-with," see Phonology), *ε-ndo* "today" < **i-nwa* "this-day" (see no. 31 and Phonology); perhaps also in *gi-* "on, in, at" (see no. 113) which may be verbified *g-i* "to be at (this)." Cf. Kar. *-i-pa* "this," *-i-kyu* "that" (see no. 108); Sal. *i-l-a*, *i-l-ta* "soon," *i-n* "yet, still"; Chum. *i-te* "this," *i-two* "that"; Was. demonstrative stem *i-* in *i-c* "then," *i-da* "thereupon," *i-na* "because, although" (originally "this-with," see no. 114); Se. *i-ta-m* "he, that"; perhaps also Yan. *-i* of *dj-i* "the" (used before first person singular and plural possessive forms; contrast *dj-u* for second personal forms).

- 107b. here: *nana*, Ar. *-nu*, *-na* of *aya-nu* "ici, par ici," *aya-na* "viens ici" (for *aya-* see no. 69); probably also verb prefix *na-* present tense (originally demonstrative adverb "now"?). Cf. Sal. *na*, *nona* "this, these," *na-ye*, *to-na-i* "here," *na-la* "now," *ta-na* "now," *no*, *non*, *no'no* "soon, some time, now"; Chum. *-na* in *kie'-na* "this" (animate); Yan. *na-* "that it is" (see Yan., no. 95). Perhaps related to absolutive **-na* of nouns (Kar. *-r*, *-ra*; Yan. *-na*; Es. *-no*, *-na-x*, *-ne-x*), see Morphology.
108. yonder: *ba-* in *ba'-ri* "there, allá." Cf. Kar. *pa* demonstrative pronoun of reference, *pa-ipa* "this," *pa-ik'yu* "that"; Chim. *pa'-mut*, *pa'-ut* "that"; E. Po. *ba* "that, the," *u-ba*, *me-ba* "that"; Sal. *pe* "that, the, those," *pa* "that, those," *pa* "there, here," *ne-pa*, *ne-pe* "there, here"; Yan. *be-* "(it is) so and so which, who."
109. what?: *ma-* in *ma'-na* "what?", *mu-*, *-mu-* (from **ma-k?* see Phonology) in *mu'-na* "what?", *nu-mu-* "where?", *-mbi-* in *a-mbi-* "when?" (or *m:* *mb* see Phonology), *-mba* in *mi-mba* "how much?" Cf. E. Po. *am* "who? what?"; Yan. *'am-bi-* "who?"; Chim. *qo-ma-s* "who?" (*qo* is used as general interrogative stem); Sal. *ma-s* "somebody, someone"; Yuman *ma-* (e. g. Moh. *ma-ki* "where?", Dieg. *mai-re* "where?").
110. where?: *a-la* "where? whence? whither?" Cf. Ton. *ala* "where?" Coa. *anu*, *ani*.
111. all, many: *ba-*, *ba-* in *ba'-na* "all," *baa* "enough," *ba'-nyu* "many." Cf. Yan. *-ba-* suffix in verb forms "all, several," *-ba-nau-ma* "everybody."
112. my: *-u-* (after consonants), *-yu-* (after vowels), from **-a-k*, **-ya-k* (see Phonology), *i-ku-* "I" from **i-ka-k*; Tlap. *r-utu-* "my mother" < **-uta-k* (cf. *r-uta-lo* "our mother"), *ano* "my father" < **ana-k* (cf. *ana-lo* "our father"). Sub. **-k* is also used as objective "me," e. g. *-lu-* < **-la-k* imperative particle + "me" (see no. 126). Cf. Chon. *ka-*, *ki-* "I" (incorporated); Po. *ke* "my"; Sal. *k'e'*, *he'-k*, *ke-k* "I," *-ak* objective "me" in verb forms; Chum. *k-* "I; my"; Ton. *ka* "me."

J. Particles

113. at: *gi-* "on, in, at" (e. g. *gi-di-yalu-* "in the water"), *gi-* "toward, from" (e. g. *gi-n'axu-* "from work"). This general locative particle is also compounded in *gi-tca* "behind, back of," *gi-tcu* "upon, over." Cf. Yan. *gi* general locative and objective particle before nouns; Sal. *ke*, *k-* locative element before pronominal suffixes (*k'-e* "to me," *ke-o* "to him," *k'-a* "to us," *k-o* "to you pl.," *ke-wat* "to them").

114. with: *ma*, generally as postposition (e. g. *iku-ma* "with me"), sometimes preposed, *ma-ni* "with, by means of"; also *n^{ya}* "and" (from **i-ma*, see no. 107a), plur. *-i-nu-*, *-i-n^{yu}-*, *-n^{yu}-* < **i-ma-k* "being with this," *en^{yu}-* "they" (from **i'mak*). This element (*ma-*, *m-*) is frequently used as verbal prefix in subordinate clauses of purpose (e. g. *ma-n^{ya}* "for drinking," literally "with-drink," *m-iu* "for eating"); also as indirective, locative, or connective suffix in verbs (e. g. *ni-cna-ma* "gave," *na-data-ma* "we speak," *iku na-da'tco-ma ika* "I listen to you," *na-dia-ma d-a'gu-lu* "to put with fire, to burn," *na-cka-ma* "to reach," *iku na-lca-ma* "I come," *na-stox ma* "to bind"). Cf. Yan. *-ma-* verb suffix "together with," *-ma-*, *-m-* indirective "to" (with first and second person object and in passive forms), *-m-tsi-*, *-mi-tsi-*, "with one another"; Chim. *-m-* in *-m-di*, *m-du* instrumental postposition; Kar. *-mu-k* nominal postposition "with"; Po. *-ma* verb suffix expressing plurality of subject, *-ma* "each other," *-ma-k* nominal postposition "in company with," *-mak* verb suffix "to be provided with"; Es. *-ma-nu* "together with" (cf. *-nu* "by means of"); Was. *-ŋa-* in *-ŋa-wa* "more, besides," also *-ŋa*, *i-ŋa* "because, although," *ic-ŋa* "but"; verbalized in Sal. *k-amau* "to be together, join." Hokan indirective **m(a)* seems to be found also in Po. *dika-m*, *daka-m* "to give": *di^{axa}*, *di'ka*, *di'kau*; Sal. *omia-m* "to meet," *p-aye-m* "to carry" (no. 58a).
115. in: *wan^y*, *wan-* "in, inside, into" (e. g. *wan-gwa-yu-* "in-house-my"), *na-wan-no* "stomach." Cf. Yan. *-wul-* "into" (as verb suffix), *i-wu-lu* "inside"; Kar. *-furu-k* "into the house" (verb suffix); Ach. *-lu* "into the house" (verb suffix; from **-xlu?*); Chim. *-xun* "into" (verb suffix), absolute *xuno-i* "into." Hokan **xwulu* from **xwalu* (**x-walu*)? Cf. also Penutian **wani*: Takelma *-wini-* in *ha'-wini-de* "in-interior-my, inside of me"; Wishram (Chinookan) *-wan* "belly, womb"; Tsimshian *wun-*, Nass River *hwin-* "innermost part."
116. a little: *ax-* in *ax-kwi-* "a little" (from **axu-*?), *-xo*, *-xu* in *gwa-xo*, *wa-xu* "a little, something." See also no. 54? Cf. Chim. *-gu*, *-ku* "somewhat, a little" (e. g. *xani-gu* "by and by," *patce-am-ku* "something"), *-gu-la-n* "merely, only"; Yan. *-gu-* verb suffix "a little, just." This element (**axu-*, **ku-*) is probably closely connected with:
117. not: *a-* (from **axwá*, see Phonology) as prefixed element, also as enclitic *a* (e. g. *su'lu a'* "someone not, nobody"). Cf. Hokan **k'u*, **ku* (also **xu?*); Yan. *k'u-* "to be not," *k'u* "not"; Chim. *xu-* "not." *x-* negative verbal prefix, *-gu-*, *-ku* negative suffix (e. g. *patci-gu-n* "no," *amaidatci-ku* "nowhere"), *-c-ku-l*, *-c-ku-n* "without"; Po. *ku-yi*, *ku-i*

- "no, not"; Sal. *ko-*, *k-* negative prefix; Coa. *ox*, *oxua* "not"; Karan. *ko-m*, *kwoo-m* "no, not." Presumably Hoka **(a)ṣu-*, **(a)k'u* of nos. 116 and 117 was proper to accented forms, **-ku* (with intermediate *k-g*) to unaccented or enclitic forms.
118. now, already: *ci'* (e. g. *ci'-naa* "now," *ci' waxi'* "it is late already"), also *ci'-*, *ci'-ni-* "already" as perfective prefix. Cf. Po. *co* "now"; Ton. *huc*; Karan. *aca-hak*; possibly also Yan. *-si* present indicative verb suffix (originally "now"? This etymology is by no means as far-fetched as it seems, as there can be little doubt that Yana tense-modal suffixes are nothing but petrified stems which were originally independent, e. g. quotative *-t'i*: verb stem *t'i-* "to say").
119. past time: *ni-*, used as verb prefix or, better, proclitic particle to express past time. Cf. Yan. *-ni-* preterit verb suffix (*-* probably shows that *-ni-* was originally felt as enclitic particle disconnected from verb form proper; cf. *-ni-dja* "I," *-nu-ma* "thou" for original *-ni-dja*, cf. *-n-dja* "I," and *-nu-ma*); Po. *-ne*, *-ni* apparentative verb suffix ("must have"). Hoka **ni* probably old particle verb: "it was, it happened."

K. Grammatical Elements⁸

120. Sub. *d-* absolutive noun prefix of frequent use (see Morphology). This element is probably petrified from demonstrative **ta-* (see no. 105), but it is possible that it already occurred as nominal prefix (**t-*) in early Hoka and did not merely develop independently in several dialects. Cf. Sal. *t-*, *ṭ-* article prefix of many nouns, also frequently used to nominalize verbs into subordinate clauses; Chum. (San Luis Obispo dialect) *t-* article prefix of many nouns (e. g. *t-axa* "bow": *ax* of other dialects), but probably also as survival in other dialects (e. g. *t-em* "leg, foot": Čhon. *imits*; Moh. *imc*; Com. *emi*); Was. *d-* common nominal prefix (e. g. *d-aṇa-l* "house": *aṇal* "to dwell"), probably also in *d-i-* "my" (cf. Sal. *ṭ-m-* "thy," Sub. *d-* . . . *-u* "my"); Sh. *t-*, *ḍ-* perhaps in certain survivals (see no. 24), further Ach. *d-* in *d-isoq* "urine" (: Sh.

⁸ There is, of course, no real line of division between grammatical elements and proclitic or enclitic particles. I have here listed such elements as seem more definitely grammatical in character. Some of them, like intransitive *g-* and adjectival *m-*, evidently belong to a far older stratum of the language than such proclitic particles as *ni-* (no. 119), *ci'* (no. 118), or *na-* (no. 107 b).

icukwi, Ats. *wissuq*; Was. *d-a'ca* "urine," *aca* "to urinate"; Chum. *oxco-t* "urine"); Po. *d-* apparently in certain nouns (e. g. *d-ano*, *d-ono* "mountain": S. E. *k-ano*, *k-no*, see no. 41; *d-axo*, *d-ako*, *d-a'yo-n*, *d-oko*, *d-uku-l*, *t-uku-n* "pestle": S. E. *s-ku-n*; *d-iwe*, *d-uwe* "night": *i'we*, *iwe*; *d-apo* "fog": *pot*; *d-iwi*, *d-owi*, *d-uwi* "coyote": *i'wi*). For Hokan noun prefixes, see Morphology.

- 120a. Sub. *r-*, *r-* absolutive noun prefix (see Morphology); Tlap. *r-* in *r-utu* "my mother" (properly "the-mother-my"). Cf. Sal. *l-* absolutive noun prefix; Chum. *a-l-*; Chon. *l-*, *t-l-*, *ka-l-*, *ha-l-*. See also nos. 104, 122. For adjectival *r-* in Sub. see Morphology.
- 120b. Sub. *s-*, *c-* absolutive noun prefix (see Morphology). Cf. Sal. *s-*, *c-* absolutive noun prefix; Chum. *s-*, *tc-*; Yuman *s-*. See also no. 123a.
- 120c. Sub. *p-* absolutive noun prefix (see Morphology). Cf. Sal. *p-* absolutive noun prefix; Po. *b-*.
- 120d. Sub. *k-* absolutive noun prefix (see Morphology). Cf. Po. *k-* absolutive noun prefix; Sal. *k-*; Yuman *k-*.
121. Sub. *d-* adjectival prefix (e. g. *d-a'gu* "big"), perhaps identical with no. 120. Cf. Was. *t-*, *d-* (e. g. *t-a'au*, *d-a'au* "good": *a'au* "to be good"); Yan. *da-* in adjective verbs; Po. *d-*, *t-* (e. g. N. E. *t-uya* "small": S. *-uya* in *baiya-uya* "man-small, boy"); Sal. *t-*, *t-* (e. g. *t-elwa-ne* "strong, fierce": *lu'wa'* "male, man"; *t'-xauwat* "yellow": *s-xauwit'* "acorn"); Chum. *t-* (e. g. *t-asu-n* "red," see no. 93). This element is discussed below.
122. Sub. *-lu'* common noun suffix (e. g. *d-i'ya-lu'* "water": *i'ya* "water," *i-la-lu'* "island" borrowed from Spanish *isla*), probably related to demonstrative *-la* (see no. 104; *-lu'* perhaps from **-la-k*, see Phonology); Tlap. *-lo* (e. g. *r-uta-lo* "thy mother": Sub. *d-u'ta-lu'*). Cf. Chim. *-r*, *-l* noun suffix (e. g. *tcima-r* "man," *pisol* "quail"), *-ra*, *-la* (e. g. *pxici-ra* "skunk"; diminutive *-l-la* is dim. *-l*+absolutive *-la*); Po. *-l* absolute noun suffix (e. g. *fo-l*, *po-l* "beads": *fo*, *po*; *cala-l* "liver": *cala*; *mitci-l* "day": *matci*; *yu-l*, *hu-l* "snow": *yu*, *i'yu*; *k-asi-l*, *k'-asi-l*, *x-asi-l* "redwood": *k'-is*, *t'-as* "red," see no. 93; *buraka-l*, *beteka-l* "bear": *butaka*), also *-n* (e. g. *kasi-n* "redwood," *tuku-n* "pestle": *duku-l*, *dako*); Dieg. *-l'*, *-ll* (e. g. *'emi-l'* "leg, foot": Moh. *'ime*; *apa-ll* "arrow": Moh. *ipa*); Was. *-l* (e. g. *d-a'qa-l* "house," *ts-iga-l* "kidney," *ts-ime-l* "beard"); Es. *-l* (in *la-l* "he," *make-l* "rat," *kumu-l* "quail," *halaka-l* "mussels," *kalu-l* "fish": Yan. *gala'*, *kume-l* "knife"), *-la* (e. g. *imi-la* "sea," *maksu-la* "earth": *matra*); Ton. *-l* in *te-l* "that, this"; Karan. *-l* in *ta-l* "that, he."
123. Sub. *m-* adjective prefix (e. g. *m-a'ca* "blue, green": *d-aca-lu'* "grass"). Cf. Yan. *m-* (e. g. *m-a'si-* "to be ripe": in-

- corporated *-si-*); Po. *m-* (e. g. *m-ato* "large": *b-ate*); Yuman *m-* (e. g. Dieg. *m-iyul-k* "sweet": Sal. *k-esiyu-'k* "sweet"); Sal. *m-* (e. g. *m-aṭ'al* "white"). This archaic element is discussed below.
- 123a. Sub. *s-*, *c-* adjective prefix (see Morphology). Cf. Sal. *s-* adjective prefix. This element is probably identical with no. 120b.
124. Sub. *g-* intransitive verb prefix (e. g. *-g-i-ma* "to ascend": *d-ehma-lu* "sky"). Cf. Sal. *k-* prefix for static verbs and adjectives (e. g. *k-axk'o'* "to be careful," *k-alep* "to forget," *k-itcmila* "transparent"), alternating with active *p-*; Se. *k-* adjective and numeral prefix (e. g. *k-opol* "black," *k-akol* "great," *k-uxo-m* "two"); Po. *k-* prefix for intransitive verbs and adjectives (e. g. *k-amale* "angry," *k-itci-du* "small": *b-itcu*); Chum. *k-* (e. g. *k-opo-k* "dead": Chim. *-po-* "to sleep"); Ton. *k-* (e. g. *k-opol* "round": *pilil* "round"); Cot. *k-* (e. g. *k-enas* "good": Ton. *hinax*, see no. 87). This important and evidently archaic Hokan element is discussed below.
125. Sub. *d-* transitive verb prefix (e. g. *-d-ia-ma* "to make go with, to place"). Cf. Was. *d-* (e. g. *d-amal* "to hear," originally "to make, give ear," see no. 7). This element is discussed at greater length below.
126. Sub. *-la*, *-l* imperative particle, *-lu* < **-lu-k* imperative with first person singular object (e. g. *da-cna-lu'*, *da-cna-l iku'*, *da-cnu-lu* "give me!") Cf. Es. *-la* imperative particle (e. g. *es-la hasa-na[x]* "bring water!" *iuk-la asa-nax* "give me water!" *absku-la* "look!")

II. NOTES ON SUBTIABA PHONOLOGY

It is not my purpose to discuss Subtiaba phonetics in any detail, nor would Dr. Lehmann's somewhat inadequate orthography make it possible to do so in any event. A few indications of probable or possible phonetic developments should be of some service, however, in elucidating the lexical comparisons that I have suggested. The phonetic character of Subtiaba seems not dissimilar in some respects to that of Mixtec-Zapotec-Otomi (cf. such syllables as *mba* and *n'ay*) and it would not be at all surprising if this Hokan language, the neighbor of languages of the Mixtec-Zapotec-Otomi group both in Mexico and in Nicaragua (Mixtec, Trique, Mazatec, Mangue-Chorotega), had been somewhat influenced by them in its sound system.

Vocalic Changes. There is evidence to indicate that *a* is unlauted

in many cases to ϵ (or e) by following or originally preceding i . Examples of a umlauted to ϵ by following i are:

$\epsilon\epsilon di$, $\epsilon' di$ "blood" < $*a'ti$ < $*a\gamma wa'ti$ (no. 3)

ϵmbi "owl" < $*ambi$ (no. 64)

Examples of a umlauted to ϵ by an unaccented preceding i which has disappeared (see below) are:

$me-$ "camisa" < $*ima-$? (no. 52)

$s\epsilon ku$ "child" < $*isa-k'u$ (no. 54)

$s\epsilon ka$ "sister" < $*isa$ (no. 56)

$ne-go$, $nee-go$ "ripe" < $*i'na$ (no. 94)

$me-nu$ "nine" < $*imba-nak$ "one-missing"? (cf. no. 100); that $me-$ is derived from $imba-$ and not from $*ima$ seems to be indicated by $n^u a$ from $*ima$ (see below)

In another series of examples original i has been modified to ϵ (or e) by a following a , either preserved, lost or itself contracted with following $-k$ to $-u$ (see below):

ϵtcu "head" < $*is(a)nu$? (no. 14)

$\epsilon n^u u$ "woodpecker" < $*inak$ (no. 29)

ϵme "camisa" < $*ima$? (no. 52)

$d-ehma$ "en haut" < $*i'ma$ (no. 44)

$\epsilon n^u u$ "they" < $*imak$ (no. 107a; see also no. 114)

ϵndo "today" < $*i-nwa$ (no. 31)

In $me-$, ϵme "camisa" from $*ima$ (see No. 52) both vowels appear to have modified each other; but it is rather probable that $*ami$ (or $*imi$) should be assumed for Sub., as $*ima$ would have resulted in $n^u a$ (see below). In $\epsilon n^u u$ "they" and plural suffix $-(i)n^u u$ we appear to have a doublet (ϵ' :- $-i$:-) dependent on differences of stress. It seems likely that all examples of Sub. ϵ go back to i -umlaut of a or a -umlaut of i .

Somewhat analogously, a seems to have become rounded to open o or to ω (Lehmann's \hat{a}) by following w in:

goo "his house" (from $*g\omega oo$ < $*gwa-\omega a$? cf. gwa "house")

$\omega s'nko$ "lizard" < $*aswa-'n-ka-$ (no. 27)

Postconsonantal ωa also became o :

ϵndo "today" < $*i-nwa$ (no. 31)

Here belongs apparently also $kwa > ku$:

$ku i$ "to come" < $*k'wani$, $*k'wali$ (no. 63)

Monophthongization of Diphthongs. The diphthong *au* seems to have often become monophthongized to *u* or *o* and we find variants of *au:u*, *o*. Examples are:

-*mpa'u* "big, fat": *ombo* (based on *umba*, -*mba*); see no. 85
mi'na'u "alone": *mi'no*

As the last example shows, the difference between diphthong and simple vowel is probably due to differences of stress. These examples help to explain a series of alternating forms in *-a* and *-o* (or *-u*), in which a suffix *-w* or *-u* seems to have combined with the final *-a* of the stem:

-*d-apa*: -*g-apo*, -*g-apu* "to sleep" (no. 80)
na-cka-ma "to reach": *iku' ni-cka-mo* "seized me"
na-dia-ma "to place at": *na-xka ga-dia-mo aku'* "to go to make fire"
iku' na-cna "I give (you)": *iku' na-cno* "I give him"
na-data, *na-ata* "to say": *ika iku' na-to* "you say to me"

We are therefore prepared to find examples of Sub. *-u* < Hoka *-au*:

d-asu "fat" < **axau* (no. 11)
-gu' "to sleep" < **kau* (no. 81)

For *-u* from *-au* < *-ak*, see below.

Parallel to *au* > *u*, *o* is *ai* > *i*. An example from Subtiaba itself is:

yi'tu "tear" < **ya-i'tu* (no. 9)

Final *-i*, *-i* probably goes back to Hoka *-ai* in:

i'ci "tree" < **ixai* (no. 47)
d-ici-lu' "bow" < **ixai* (no. 49)

For *-u* from *-ai* < *-at*, see below.

Change of w to gw. There is clear evidence in Subtiaba of an interchange between initial or intervocalic *w* and *gw* and of *ηw* and *ηgw*. As final *-w* unites with preceding *a* to form *-au* or *-o*, we may have an interchange between final *-au* (or *-o*) and medial *-agw-* (*-akw-*). Examples are:

aηwa "mountain": *aηgwa* (no. 41)
d-a'wa "there is not": *d-a'gwa* (no. 70a)
na-ga'wi "to flee," *na-ga'u* "to go": *na-ga'gwi* (no. 70)
a-na-wano "you are not silent": *na-gwano* "quedarse callado"
waxu': *gwaxo* "a little"

waxi "late": *gwaxi dimba si'gu* "one year late"
d-a'u, *d-a'u* "mouth" (<*d-qw*, *d-aŋw*): *d-aŋwa* (no. 16);
 cf. also *na-ŋwa-xa* "to yawn"
yu'a "cabuya" (read *yuwa*): Tlap. *yugua* "maguey" (read
yugwa)
-to "to say" (from *-ta-w*, see above): *ni-takw i'ku* "I said,"
ni-takw i'ka "you said" (from *-ta-w i'-*)

The last example and such cognates as *aŋwa* "mountain": Chim. *awu* (*a'ma*), *d-a'wa* "there is not": Sal. *k-awa* "to be lacking," *-g-a'u* "to go": Hokan **awa*, and *d-a'u* (*d-aŋwa*) "mouth": Chim. *h-awa* suggest strongly that *w* is the original consonant and that *g* arose parasitically before it. In the following examples original *w* appears regularly as *gw* (*g*, *k* before *-u'*):

gwa "house" < Hokan **(i)wa*, **(a)wa* (no. 50); but Ar. writes also *iwā*
a'gu "fire" < *agwu* < **agwa-k* (see below) < Hokan **'awa-* (no. 36)
a'xku "four" < *a'x'gwu* < **a'xwagwa-k* (see below) < **a'xwawa-k* (no. 103)

Vocalization of Final -ak and -at. Subtiaba seems to tolerate no final consonants. As unaccented vowels frequently disappeared (see below), this can only mean that the final consonant which remained when an originally following unaccented vowel was lost united to form a diphthong or long vowel with the preceding vowel. There is not enough evidence available to work out all the phonetic developments that must have taken place, but it is rather clear that *-ak* became *-u'* (or *-o'*) no doubt via *-au*. We may gather this from comparative evidence, from alternations within Subtiaba of forms in *-a* and *-u'* (i. e. *-a* + *a* lost consonant), and from at least one luckily preserved alternation of *-u'* : *-ag-*. Examples are:

i'su "bone" < **i'xak*, **i'hyak* (no. 4)
en'u "woodpecker" < **inak* (no. 29)
w's'nko "lizard" < **aswa'nkak* (no. 27)
m-i'du'u (read *mi'du'u?*) "night" < **itako* (no. 42); cf. Coah. *tako-m* "night" and Sub. (Sq.) *m-idagi-na* "black"
t-i'tcu "white" < **t-i'ca-k* (no. 98); cf. Sub. *m-i'ca* "white"
mu'-, *-mu* "what?" < **ma-k*; cf. Sub. *ma'-* (no. 109)
-ga-n'u "to die" < **-g-imak* or **-g-ima(ŋ)* (no. 65)
ra'bu "person, man" < **ra-ba-k* (no. 54a): *ra'ba-gu* "woman," literally "person-female"
-lu "the" < **-la-k* (no. 122); cf. Sub. demonstrative stem *-la* "this"

- lu* imperative particle + "me" < **la-k* (no. 126): Es. -*la* imperative particle; Sub. -*la*, -*l*
a·gu "fire" < **awa-k* (no. 36)
uku "moon" < **axawa-k*? (no. 40)
ε-n^yu "they," plur. suffix -(i)-*n^yu* < **i-ma-k* (no. 114); cf. Po. -*ma-k* "in company with"
-u "my," Tlap. -*o* < **a-k(i)* (no. 112)
-u numeral ending in *a·pu* "two" (no. 101), *a·su* "three" (no. 102), *axku* "four" (no. 104), *wi·su* "five," *ma·xu* "six," *kinu* "seven," and *menu* "nine" < **a-k*; cf. Yuman numerals of type Moh. *havi-k* "two," *hamo-k* "three"

The group -*alk* appears as -*au*, in other words the -*l*- became *n* and was absorbed as nasalization in -*au* < -*ak*:

n^yau "ear" < **ismalk* (no. 7)

It is reasonable to suppose that original -*at* was similarly vocalized to -*ai*, -*i*-. Several examples seem to support this view:

- i·xki* "olosica" < **ixkat* (no. 26); cf. Sal. *i-l-kat* "ant"
ambi "when?" < **a-ma-t* "what-at?" (no. 109)
iηgi "near" < **i-ηga-t* "this-at"? (see no. 107a)
ga-mi, *ga·mi* "with, together" < **ga-ma-t* "that-together-at"? (see no. 114); cf. Sub. *ma* "with")

Palatalizing of Nasals. One of the characteristic features of Subtiaba phonetics is the frequency of the anterior palatal nasal, *n^y* (Lehmann's *ñ*). It is highly probable that this sound originates often and perhaps always, from *i* + following nasal (*n*, *m*); *im* first became palatalized to *im^y*, which then fell together with *in^y* from original *in*. Before *a* unaccented *in^y* seems regularly to have simplified to *n^y*, which may therefore be considered as nasal (*n*, *m*) with inherent *i*-vowel. Before *u*, however, *in^y* sometimes assimilates to *un^y*. Examples are:

- εn^yu* "woodpecker" < **inak* (no. 29)
n^ya·u "hand" < **inaw-* (no. 13)
n^ya "and" < **i-ma* "this-with" (no. 114); cf. Was. *i-ηa* "because, although"
-n^ya "to drink" < **ima* (no. 66)
 -(i)-*n^yu*, -*i-nu* plural suffix < **i-ma'-k* (nos. 107a, 114)
εn^yu "they" < **i'-ma-k* (nos. 107a, 114).
-ga-n^yu "to die" < **imak* (no. 65)
n^yau "ear" < **imalk* < **ismalk* (no. 7); *ism-* either assimilated to *imm-* > *in^y-* (cf. Was. *d-amal* "to hear" [read *-ammal*?] < **asmalk*) or else *ism-* first passed to *isn-* > *inn-* > (i)*n^y-* (cf. Sal. *p-esna-*, *p-esno-* "to hear, listen"; Ach. *issat* and Sh. *isak* [read *issak*?] also presuppose **isnak* < **ismak*, cf. Ats. *asmak*)

un^{yu} "worm" < **imu*- (no. 25)

u^{nyu} "string" (read *unn^{yu}*?) < **ip(a)mu* (no. 53)

An original **umu* "face" (itself probably assimilated from **uma*) seems to have dissimilated its labials to *inu* (no. 10); note that this *in*-, in contrast to *un^{yu}* "worm" < **imu*-, does not palatalize to (i)*n^{yu}* or *un^{yu}*.

Change of l to n. There is some indication that an original *l* sometimes passed to *n*, whence nasalization of the preceding vowel:

n^{ya} "ear" < **ismalk* via **ismank* (no. 7); cf. Yahi *mangu*: N. Yana *mal'gu*, C. Yana *malgu* (< **isma'-l'-ka-w*, old dual in -*w* from still older dual-plural form in -*l'-*)

endo "day" < **i-nwa* < **i-lwa* (no. 31); but original **anwa* may be assumed as well as **alwa* for "sun"

-k^ui "to come" < **k'wali* (no. 63)

Possibly also:

wan^y, *waŋ*- "in" < **wali* (cf. Hokaŋ **y-wulu*, no. 115),

but this form is better referred to Penutian **wani* "inside."

Nasalized Stops. The consonant groups *mb* (also *mp*), *nd*, and *ŋg* are evidently equivalent to single consonants, at least psychologically. They are derived in certain cases from simple stops, probably by contraction with an old syllable which contained a nasal, but perhaps also by the direct change of intervocalic -*g*-, -*d*-, and -*b*- to -*g*-, -*nd*-, and -*mb*-:

bii "day": *niŋka-mbi-i-lu* "the whole day," *a-su-mbi-i* "in 3 days"

ba-n^{yu} "many": *pu·ru·mba-n^{yu}* "somos muchos"

gi·ko, *gi·ka* "liver": *ga-ŋgi·ga*, *na-ŋgi·ko* "fever (with liver affection)"

i·ka "he" (for demonstrative stem *ka* see no. 106): *i-ŋga* "he"

na-goo "to filter, squeeze out": *c-iŋgoo* "wooden churn"

The comparative evidence suggests that under as yet undetermined conditions intervocalic *p* (and *p'*) became *mb*, *mp*; for the change of -*l*- to -*nd*- the evidence is more slender.

amba "excrement" < **ap'a* (no. 8)

umba, -*mpa·u* "fat" < **up'a*- (no. 85) or, more probably, **(u)m-up'a*- (see below)

imba "one" < **ipa* (no. 100)

-*ndi·yu* "sick": Yan. *m-a·di*- (no. 95) (but see below)

The -*mb*- resulting from -*p*- could become reduced, it seems, to simple *m*- in an unaccented syllable:

mε-nu· "nine" (= "one missing"?) < *imba*- "one" (with *a* umlauted to *ε* by formerly preceding *i* but with *m* not palatalized to *n*^y; *imba*- to *mε*-, but original **ima* to *n^ya*)

On the other hand, it seems equally clear that under certain circumstances intervocalic *m* and *n* become semi-stopped to *mb* and *nd* (cf. *w* > *g^w*):

ambi· "when?" < **ama-t*, also *-mba* in *mi-mba* "how much?":
ma-na "what?" (no. 109)
u-mba, *-umba*- "earth" < **uma* (no. 34)
-mbi-ya "to cry" < **-mi-*, *εmbi* "owl" < **ami* (no. 64)
endo "day" < **i-nwa*
-ndiegu· "to laugh": Sal. *ilik* (no. 71) (but see below)

It is not possible to tell with our scanty materials when *m* and *n* remained and when they shifted to *mb* and *nd*. In the case of *endo* the *d* may have developed as a glide between *n* and *w* of **i-nwa*. In *u-mba* too it is possible that the original form was **amwa* rather than **ama* (or **uma*). This would explain why some of the Hokan languages presuppose a type **ama* (Chimariko, Pomo, Yuman, Seri, Chontal), others rather **uma* (Salinan, Subtiaba). If we look beyond Hokan proper to other languages of the larger Hokan-Siouan group,⁹ we find confirmatory evidence for an original **amwa* or **uma* (**oma*) in Yuki *on* (< **om* < **oma*), Wappo *oma* "earth, world"; but Sioux has *ma*-.

It may not be without significance that Chipanec, which is closely related to Mazatec and Chorotega-Mangue, has analogous changes of *k*, *p*, and *t* to *ŋg*, *mb*, and *nd*, e. g. *kope* "to see": fut. *ta-ŋgope*, *pomo* "to think": fut. *ta-mbomo*, *tiri* "mountain": plur. *ni-ndiri*. It is quite likely that the general phonetic slant of Subtiaba was determined to a considerable extent by influences of languages of the Mixtec-Zapotec-Otomi group.

Hokan x and ɣ. There seem to have been two distinct *k*-fricatives in Hokan, a more forward guttural (*x*) and a velar (*ɣ*, also labialized *ɣw*). The latter sound is preserved in all dialects as *x* (*ɣ*, *ɣ*), as aspiration (*h*, *'*), or as aspirated stop (*k'*); good test words are **aɣwa*- "two," **aɣwa-(ɣ)wa* "four" (see nos. 101, 103), **aɣwa'ti* "blood" (see no. 3), and **iɣana*- "good" (see no. 87). The more forward *x* is treated like *ɣ* in certain dialects (e. g.

⁹ See *Science*, N. S., Oct. 28, 1921, p. 408.

Chimariko, Yana, Pomo, Chumash, Tonkawa), but becomes assibilated to *s*, *c* (*cx*), or *ts* in others (e. g. Karok, Shasta-Achomawi, Esselen, Salinan); good test words are **ixa* 'stone' (see no. 45), **xaka* 'flint, knife,' and **axa* 'water.' Such examples as Sub. *axa*, -*aha*, *a'x*- 'old' (no. 92), -*i'xny'a* 'good' (no. 87), and *axku* 'four' (no. 103) doubtless contain Hokan *x* and *xw*; *x* is regularly palatalized to *x̣* after *i*-vowels. Another set of examples indicates that Hokan *x* was assibilated in Subtiaba to *s*, *c*:

isi·, *si*·- 'stone' < **ixa*· (no. 45)

d-asu· 'fat' < **axau* (no. 11)

i'ci 'tree' < **ixai* (no. 47)

d-i'ci-lu· 'bow' < **ixai* (no. 49)

This assibilation in Subtiaba of *x* to *s*, *c* is important because it shows that the parallel process in Karok-Shastan and in Esselen-Salinan is rooted in an old Hokan distinction between *x* and *x̣*. That the assibilation took place independently in the three areas is demonstrated by the fact that Chimariko, which is rather closely related to Karok and Shasta-Achomawi but which tends to be more archaic than they, has preserved *x* distinct from the true sibilants. It is very likely that a more careful phonetic study than has yet been published of certain Hokan languages would indicate that Hokan *x* and *x̣* are still preserved intact. In Yana this is not the case, for they have fallen into a single sound, *x* or *h* (e. g. *xa*·, *ha*·- 'water' < **axa* like *ux*·, *u*·- 'two' < **axwa*·). One wonders, for instance, whether the Yuman dialects do not distinguish *x* (or *h*) from *x̣* (or *ḥ*). In the Subtiaba examples just given note that *s* remains in 'stone' and 'fat' because followed by original back vowels but appears palatalized to *c* in 'tree' and 'bow' because followed by *i*·, *i* from older *ai*. The treatment of Hokan *x* and *x̣* in Subtiaba may therefore be indicated as follows:

	<i>before back vowels before front vowels</i>	
Hokan <i>x</i> > Sub.	<i>s</i>	<i>c</i>
Hokan <i>x̣</i> > Sub.	<i>x̣</i> , <i>h</i>	<i>x̣</i>

A secondary Hokan *x̣* arose from *x̣* (*h*) before *y*; this was shifted to *s*:

i'su· 'bone' < **ihyak*, **i'xyak* (no. 4)

Observe that neither in *i'su* "bone" nor in *isi* "stone" has the preceding *i* the power to palatalize *s* to *c*. This is because the *s* is not a true sibilant in origin but is secondarily developed from *-xy-* and *-x-*. Contrast forms like *mi'ca* "white" with primary *-s-* (see no. 98).

Of much later date than the passage of Hokan *x* to Sub. *s*, *c* is that of Sub. *x* to *s* when immediately followed by a consonant. This change has not been consummated yet, for we find many alternative forms.

maɣma "quick": *masma*
na-ɣka "to go": Ar. *na-ska*
na-ɣto "to shave, bark": *osto* "bark"
daɣka "it stinks": *-da'ska* "to smell"
na-goɣta-lu "volverse": *ni-gu'sta-ma* "te pareces"
nu-ɣmba "mulatto": *nu'smba*
aɣku "four": Ar. *asku*
roaɣ-nʷu "family": *daka-ruas nʷu'nana* "gente de lejos"

The last example (cf. *ro'axi* "people") and the etymology of *aɣku* (see no. 103) show that *ɣ* is the older sound in these consonant groups and that they have originated by the dropping out of unaccented vowels that originally stood between the *ɣ* and the following consonant. A somewhat similar process, but in the opposite sense, has taken place in Yana. Yahi *-x-*+consonant and *-s-*+consonant fell together into *-x-* (whence *-'*) +consonant in Northern and Central Yana.

Loss and Contraction of Vowels. We have already seen reason to believe that final vowels, presumably only if short and unaccented, are lost in Subtiaba, also that medial short vowels, if preceded by the accent, drop out and thus cause consonant clusters to arise. A few further examples are:

-g-iu "to eat" < **-g-iwa* (no. 67)
-t-a'u "to sit" < **-t-a'wa* (no. 77)
a'ɣ-mba "old": *aɣa'* "grown up," *d-aha'* "maturity" (no. 92)
aɣ-(kwi') "little": (*gwa*)-*ɣo* "a little" (no. 116)

The group **aɣwa'* seems to develop to Subtiaba *a'*, probably via *aha'*:

a'- "not" < **aɣwa'* (no. 117)
a'- "two" in *a'-pu* "two," *a'-su* "three" < **aɣwa'*- (see nos. 101, 102): *aɣ-ku* "four" < **a'ɣwa-* (no. 103)

d-aca-lu "grass," *m-a'ca* "green" < **axwa'si* "grass," **m-axwa'si* (and **m-a'xwasi* > **m-ax'si*?) "green" (nos. 38, 88); but if *-aca-*, *-a'ca-* are to be understood as *-a'ca-*, this example does not belong here
é'edi, *é'di* "blood" (read *é''di*?) < **a''di* < **axwa'ti* (no. 3)

The loss of unaccented short vowels between consonants is a frequent process in Hokan dialects and probably accounts for most or all of the consonant clusters in these languages. Thus, Hokan **i'pali* "tongue" becomes *i'p'li* in Achomawi; Hokan **i'sama-* "ear" becomes **i'sma-*, whence Atsugewi *a'sma-k*, Achomawi *i'ssa-t*, Washo *d-a'mma-l* "to hear," Salinan *p-esna'-* "to hear"; Yana *xa'ga* "flint" corresponds to *dat'-xga'-i-si* "it has much flint." This process must have operated in countless Subtiaba words for which we have no evidence in Subtiaba itself. Frequently, as elsewhere, consonants thus brought together have become assimilated. In a number of examples we can surmise the former presence of these vowels from the comparative evidence given by forms in other Hokan languages, e. g.:

n^yay "ear" < **i'mm^ya'nk* < **i'sma'lk* < **isama-* (no. 7)
-u'mi'u "navel" (read *-ummiu*) < **u'npi'w-* < **u'nap'i'w-* (no. 17)
ω's'nko "lizard" < **a'swa'nka'k* (no. 27)
i'na "leaf" (read *inna*) < **i'tna'* < **i'tana'* (no. 39)
u'n^yu "string" (read *unn^yu*) < **i'mm^yu'* < **i'pamu'* (no. 53)
axku "four" < **a'x'gwa'-k* < **a'xwa-wa'-k* (no. 103)
uxku "moon" < **uxgwa'-k* < **u'xawa'k* (no. 40)
a'xka "spider" < **a'xaka'* (no. 24).

(To be continued)

ENTOMOLOGY AMONG THE BELLACOOLA AND CARRIER INDIANS

By HARLAN I. SMITH

THE Bellacoola Indians live in the Norway of Canada, about midway of the Pacific Coast, where Sir Alexander Mackenzie, the first white man to cross Canada, reached the sea; that is, about half way between Vancouver and Prince Rupert. Their country is around the head of the inlets about sixty miles in from or east of Ocean Falls and the usual route of the steamers up and down the coast. This inland passage is with few exceptions protected by the outer fringe of islands. The Bellacoola language is one of the Salish linguistic stock. The people are of the typical North Pacific Coast culture, characterized by the extensive use of red cedar and sea products, especially salmon, huge houses of split cedar planks with carved house posts, and totem poles, and immense seagoing canoes dug out of cedar. They were expert carpenters and had a peculiar art, especially in painting and carving, largely of conventionalized animal forms—a valuable contribution to the art of the world. This art may become of great financial value to the manufacturers of this country as well as a magnet capable of exploitation to bring in tourists with money from foreign lands. These Indians had a very highly developed social organization, many dramas and rituals, and a complex financial system popularly known as the potlatch.

The Carrier Indians of Ulkatcho, on the other hand, live in the high plateau of the semi-arid region, perhaps 75 miles north-east of the Bellacoola. They differ from the Bellacoola in language, appearance, and culture perhaps as much as do the Turks from the English. They had a less realistic art, which was largely geometric and pictographic, highly conventionalized and symbolic. Their social organization and financial system also were less highly developed.

From time to time during 1920-1923 inclusive, I have secured from both these peoples data about their use of materials. Part

of these data refer to insects, and may be of interest to entomologists, although my spelling of Indian words is very problematical, because some of the sounds I can neither hear nor make, and I am unable to record adequately many of those that I can hear. The data here given are preliminary to a complete working over of my notes, but are believed to be nearly complete.

Insects apparently were not so well observed by the Bellacoola as were useful mammals and plants, the stinger of the bumble-bee, for instance, being supposed to be in its mouth. Few insects had names, that is, mainly those which were used or which troubled the Indians. Insects were not used for food, and honey was unknown until after the coming of the white man. The head of the gad-fly was used as a pattern in painting designs, the nest of the yellow-jacket in sympathetic magic or witchcraft, and "fly spit" was said to be good for sores. They had a story about the bumble-bee.

Among the Ulkatcho also observation of insects was weaker than that of mammals and plants, and they apparently had names for only a few insects, those which troubled them. Ant lion pits and its method of taking prey were known. Insects were of no use to the Ulkatcho whatever. An instance was observed of an Indian amusing himself with a buzzing fly held in his mouth. They employed smudges, fish oil, gum of the cottonwood, and blossoms of cow parsnip with oil to protect themselves from mosquitoes, black flies and no-see-ums, and smoke to protect foods from flies.

The Ant lion, among the Ulkatcho, is called Kinnelkats. It is said to be numerous at Ulkatcho, but that it was useless and that there was no story about it. My informant voluntarily showed me the pits made by the larvae of this insect and, catching ants for the purpose, demonstrated its well-known method of taking its prey.

The grasshopper (*Orthoptera*), that makes a noise by rubbing its wings together when it flies, was called Telcus, among the Ulkatcho.

"Fly spit," that is the material surrounding a nymph of a spittle insect, also known as a frog hopper (*Cercopidae*), is said

by some old Bellacoola men to be good for sores, but my informant did not believe it.

Among the Ulkatcho it is numerous, but was not used, not even as a medicine.

A bumble-bee, identified as *Bombus appositus* Cresson, by Dr. H. J. Franklin, among the Bellacoola, was called Tikquanats or the large Skotl, Skotl being the name of three kinds of insects, a bumble-bee, a yellow jacket, and a hornet. It was not taken nor used, and was said to do no harm to people. My informant did not know whether it had a house or not. Neither did he know that it made honey until told so by white men. They say the bee took one of the prickers of the swamp gooseberry for a stinger, but my informant said he did not believe this. He thought it had a sting in its mouth, not in its tail, until I showed him. The Bellacoola have a story that a being considered by a little girl to be a man, but by an elder sister to be a bumble-bee, was once seen coming from the noonday sun. The little girl became blind, but her eyes appeared to be all right. Many thought she was made blind by too much sunlight when she looked at the man who was a bumble-bee.

Among the Ulkatcho, this bumble-bee was called Whultocho, *Whulto* being the name of a yellow jacket, and *cho* meaning large. *Whus* or *Whis* means pricker. The bumble-bee was not used as fish bait.

An insect, probably the hornet, is called Slow lowstl, by the Bellacoola, who say it has a little white on the tail and makes a small nest in a tree in July.

The yellow jacket among the Bellacoola was called Quolalaits (Clolaclaylaits) (Clolaclaylaits skotl) while all three kinds of insects, the bumble-bee, the yellow jacket and the hornet, were called Skotl. The yellow jacket was known to make a nest. The nest was used in sympathetic magic or witchcraft as follows: When one wished to cause the child of one's enemy to grow up to be a quarrelsome person, the nest of the yellow-jacket was burned and the ashes rubbed on the child. When the child grew up he or she would fight with everyone.

A fly which does not bite, perhaps the house fly among the Bellacoola, was called Mammish, and was said to lay its eggs on fish and fish eggs. The place called Numammish was so named because the people thought they saw flies and they said *mammish*, but when the supposed flies fell they were seen to be toads.

Among the Ulkatcho, this fly was called Asthuz, and was said to lay its eggs on salmon. To keep off flies of all kinds and mosquitoes the blossoms of the cow parsnip, *Heracleum lanatum* Michx, called Goosss in Ulkatcho, were put in oil of the eulachon fish or any kind of oil and the mixture was put on the body. Every food that was smoked was smoked so that flies would keep away from it. Flies were not used as fish bait.

The Gad-fly, *Tabanus* sp.? probably *sonomensis* O. G. of the family *Tabanidae*, which is commonly called horsefly, is numerous when the horses come down to Bella Coola from the interior. Among the Bellacoola it is called Silt lay estl. It is said to lay its eggs in the backs of the caribou in July, and these hatch into "worms." The face and eyes, being pretty, were used long ago as a pattern for a picture which was painted on fine boxes. There was no story of this fly.

Among the Ulkatcho, this gad-fly is called Clez co, and a smaller one is called Clez cho yaz, *yaz* signifying small. Once I was told that no medicine was used to keep off the gad-fly, but on another occasion that cottonwood gum with oil was used. Apparently for his own amusement, my Ulkatcho Indian informant held one of these flies by the abdomen inside his mouth and made it buzz.

Two kinds of little black biting fly, horse fly (*Symphoromyia* sp.?) apparently considered as one, are called Skikpie estl in Bellacoola. They are called Clez cho yaz in Ulkatcho *yaz* signifying small.

The Black fly, *Simuliidae*, among the Bellacoola is called Ticos cosee and Alk co ok hotl.

Among the Ulkatcho it is called Whuchu, while Tsih is the name of black flies, mosquitoes, and no-see-ums. All these were kept off with a smoke smudge made with a fire of any kind of wood on which were put such things as green, wet, or rotten wood,

or grass. Black flies were sometimes kept off by putting oil of either salmon or trout on the face and hands. Cottonwood gum with oil was also used for this purpose.

The No-see-um among the Bellacoola is called Sleigh et el ke.

Among the Ulkatcho the no-see-um is called Whetlcatl and it is said that the bite of this little fly causes swelling and sickness. It was kept off in the same manner as the black fly.

Mosquitoes, *Culicidae*, among the Bellacoola, were called Pikim.

Among the Ulkatcho they were kept off with smoke in the same manner as the black fly, and with blossoms of the cow parsnip in oil in the same manner as flies. It is not clear if the gum of the cottonwood was or was not used for this purpose, as it was to keep off no-see-ums.

Among the Ulkatcho "worms" were not used as fish bait.

VICTORIA MEMORIAL MUSEUM,
OTTAWA, CANADA.

REPORT OF A NEW DOUBLE CONOIDAL PIPE FROM KENTUCKY

By WM. S. WEBB

IT IS believed that the Indian Pipe shown in Figures 1, 2, is a good example of the Double Conoidal pipe as classified by McGuire¹ having, with the usual distinguishing characteristics, other interesting features.

This pipe was obtained from Mr. John Cinnamon, of Lawrenceburg, Ky., who found it while cultivating land on the farm of Mr. T. J. McCouan, one mile east of Farmdale in Franklin County, Ky. An old pasture which had been in bluegrass sod for many years had been ploughed up in the spring of 1913, and after ploughing, the sod was cut by a disk harrow. This pipe, covered with earth and clay, became entangled between neighboring disks of the harrow, arresting its motion. In removing this obstruction, this peculiar stone was discovered. When found it was not known to be of any historical significance, but because of its unusual form and color it was preserved in the home of the finder, serving for many years as a "door stop," a use to which it is well adapted, being roughly cubical in form and rather heavy, weighing 1212.5 grams (2.9 lbs.).

Notwithstanding this service, the manner of its discovery, and the probable fact that it has resided for perhaps hundreds of years in the surface soil, easily within the "frost zone" this specimen appears to be but little the worse for wear, showing only one relatively recent scratch, that on the base surface. Several small chips have been split from the edge of the base and one of the four engraved images is slightly marred, but all of this chipping has the appearance of great age, and points to the conclusion that practically all damage which has been done this specimen was sustained by it while still in the service of its prehistoric possessor.

This pipe was probably cut from a block of sandstone, and presents a general cubical appearance, having four vertical faces,

¹ Joseph D. McGuire, Report U. S. Nat. Museum, Part 1, 1897.

each being an approximate rectangle. The base is 4-1/4 inches long from front to rear, and 4 inches broad. The height is fully 3 inches above the base section. The pipe proper rests upon a base section 3/4 inch thick, the outline of which is exaggerated by a deep groove cut parallel to the plane of the base, (see Figure 1). Portions of this groove seem to be worn, suggesting that it served a double purpose of outlining the base section, and also

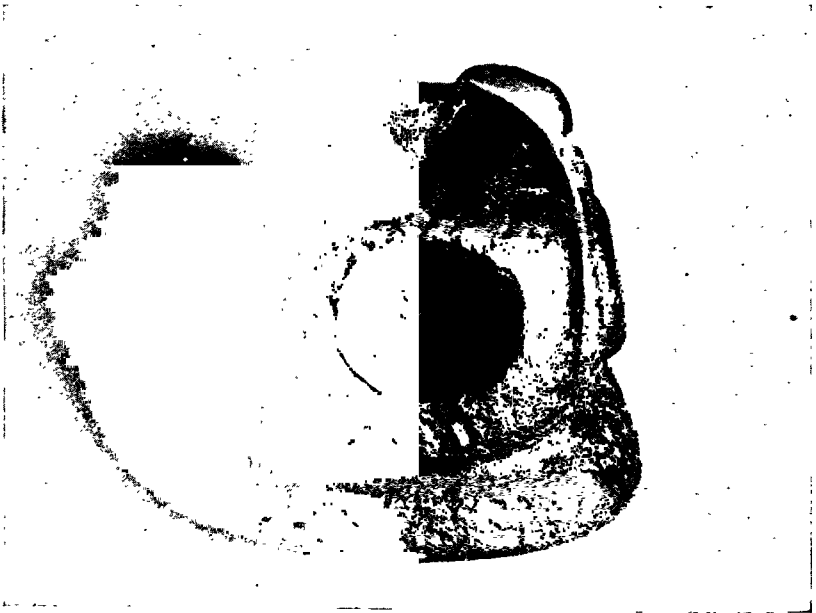


FIG. 1. Back view of pipe.

providing an opportunity for attachment of a thong. Such a thong may have served as a means of carrying the pipe or as a simple attachment to any other form of support.

The four faces of the pipe rise from the base almost perpendicularly. Into the rear face is cut the large conical stem hole, the diameter of which at the face is 1-3/8 inches and decreases to 1/4 inch diameter at a depth of 1-1/4 inches. The stem hole is almost an exact duplicate of the bowl, which has the same depth and slope of side. These two conical drillings could have been made by the same blunt reamer. That they were originally

reamed out is clearly shown by the circular grooves still existing in the conical face of the stem hole. However, the main bowl shows several vertical grooves also, which appear to have been made with a blunt instrument used as a chisel. Such grooves could easily have been made in cleaning the bowl by scraping, possibly after the pipe had been used. The grooves in both bowl and stem hole appear to be quite as old as the other surface of the pipe,



FIG. 2. View showing carved medallions.

and were evidently made either by the maker or the prehistoric user of this specimen.

The material of this pipe was originally a rather heavy sandstone, probably having a large iron content, probably carbonate of iron. The sandstone has undergone a change, (after the manufacture of the pipe), as the result of being hundreds of years in the soil, not deeply covered, and exposed to the action of the air and soil water. The specimen has become covered with limonite ($2\text{Fe}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$) to a depth of $1/16$ inch or more, giving the pipe a fairly smooth hard surface, dark red in color. This coating gives

the characteristic red line when rubbed on unglazed porcelain. Professor McFarland of the Department of Geology of the University of Kentucky who kindly examined this specimen expressed the opinion that this coating may have been derived from carbonate of iron in the original sandstone, by oxidation and weathering to limonite, or it may have been deposited on the sandstone as the result of the action of soil water, rich in iron content. The present density of the specimen is 2.24. The actual water displacement volume is 541 c.c.



FIG. 3. Detailed view of medallions.

Perhaps the most interesting feature of this specimen is the medallion-like disks raised nearly $\frac{1}{4}$ inch above the face of the pipe, one on the right and another on the left face of the pipe as one views the stem hole. Upon each of these raised disks is engraved a human face. Figure 3 shows these two disks, side by side for comparison.

This engraving was done by deeply incised lines, the eyes being each represented by crescentic lines concave toward each other. The nose in both images is rather boldly represented by a raised triangle, extending from between the eyes, base downward, completely to the deeply incised line representing the mouth. In both figures the surface of this triangle is broken by

a slight increase in elevation, giving to this nose the "Roman" form.

On the front face of the pipe, the side opposite the stem hole, are to be found two raised figures, one a face carved similarly to the medallion-like disks, but being in such high relief as to appear almost like a spherical head. A second image representing a head and form of body also raised in high relief appears on the front face of the pipe (see Figure 2). These two images are much less carefully wrought out than the two side carvings, and the features of the nearly spherical head are slightly marred as described above, by an apparently old injury.

The base of the pipe has a slightly convex surface, and it would appear that the surface was once smooth and had a fair polish, if we may judge by a portion of the surface remaining. However, in almost the exact center of this surface there is a large pit, nearly one inch in diameter and almost $1/4$ inch deep giving to the basal surface the usual appearance of a hammer stone. It is not at all impossible that the pipe might have been so used. Because of its shape it was fairly easy to hold in the hand, and because of its weight it might easily have served to crack nuts, or buffet a stone chisel, it being not an unusual thing to find evidence that among stone age men one tool served two or more purposes.

When we consider the rather considerable weight of this specimen, one wonders how it was supported while in use as a pipe. Perhaps the large pit hole in the basal surface, and the groove about the basal section could be explained on the basis that they enabled the user to attach it by means of a thong to a support, perhaps to the end of a small post, the other end of which could be easily set in the earth. One is tempted to speculate as to whether or not this specimen was really a pipe as we ordinarily understand the term. The fact that as a pipe it appears unwieldy, and that it may have been designed to be supported on a vertical post, suggests that it might have served in some ceremony, religious or otherwise as a small altar, from which smoke was expected to rise at an appointed time. Because of the size of the bowl, a very considerable amount of combustion could

take place, especially if assisted by blowing through a hollow cane presented to the very large stem hole.

The pipe is now in the private collection of the author and is believed by him to be much older than any of the hundred or more Kentucky pipes in this collection. So far as he is aware, this form of pipe has not heretofore been assigned to any particular linguistic group, tribe or culture.

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BOOK REVIEWS

METHODS AND PRINCIPLES

Human Origins; A Manual of Prehistory. GEORGE GRANT MACCURDY.
New York and London: D. Appleton & Co., 1924. 2 vols., LIV,
956 pp., 410 illustrations. Price, \$10.00.

There being available already about twenty general treatises on European prehistory, mostly of recent date, the man who proposes to add yet another to the list should, it would seem, have some special reason for doing so. Fortunately, the present author, Research Associate with professorial rank at Yale University, possesses all the excuses necessary under the circumstances in the shape of special qualifications for the task. He has given, as he says, all of thirty years to the patient accumulation and study of the great multitude of facts upon which rests today the illuminating account of early man and his culture. Indeed, it is entirely safe and proper to say that no other professional student in America, or in Europe either for that matter, has a first-hand acquaintance with the facts in question equal to that of Dr. MacCurdy. American anthropologists, therefore, while leaving congratulations to others, may take genuine satisfaction in that one of their number has been enabled finally to finish this long contemplated work.

The two sumptuous-looking volumes appear to contain everything that could be expected, from Preface to Index, including such features as a five-page analytical Table of Contents, eleven pages of glossary, various bibliographies, three appendices covering 178 pages, and an index of 38 pages. The work is liberally, almost lavishly, illustrated; and the mechanical quality of these illustrations, as well as of the typography itself, seems all that could be desired.

Volume 1, devoted chiefly to Paleolithic man, opens with a historical introduction giving a brief account of the rise and development of prehistoric archaeology, the results of which are summed up in the still briefer form of chronological tables. The second chapter treats of the Ice Age and its bearing on man's antiquity, the discussion being re-emphasized and clarified by means of correlation schemes. Chapters three to six, inclusive, are devoted respectively to the

Eolithic Period, the Lower Paleolithic, the Mousterian Epoch, and the Upper Paleolithic Period. The treatment here conforms in all essentials to the now practically stereotyped plan followed by all the compendium writers. That is, for each culture level the principal forms of artifacts are named and illustrated, their modes of occurrence are given, the accompanying faunas are listed, and something is afforded by way of outline schemes and maps to indicate the probable distribution of the given culture over the Old World at large. Chapter VII, covering about 86 pages, presents an excellent and comparatively original account of Paleolithic art. This account, while necessarily limited, gives through both text and illustrations a clear idea of all the successive phases of sculpture, engraving, and painting. The very latest finds and determinations are included. Tabular analyses with maps showing the geographic occurrence of various typical representations, such as the human form, the horse, etc., are given; and all other organisms, animal and vegetable, treated by the cave artist, as well as the more distinctly ornamental designs of geometric character, are duly dwelt upon. Altogether this strikes one as the most appealing subject dealt with in the book. In Chapter VIII under the title of Fossil Man the author furnishes a complete descriptive catalogue—fully 130 pages long—of all the known skeletal remains of early man and his progenitors, together with brief citations of the prevailing opinions regarding the character and value of the data. An additional short chapter summarizes the outstanding characteristics of the Old Stone Age and closes the volume.

The second volume treats in 296 pages (Chapters x to xv) all the remaining divisions of prehistoric time. Thus a short chapter is devoted to the Transition Period, in which have been included the Azilian-Tardenoisian and Campignian culture phases. The Neolithic Age comprises two long chapters, one descriptive and the other explanatory in character; while the Bronze and Iron ages receive each a chapter of moderate length. The work proper ends with a very brief chapter describing the physical characters of post-Pleistocene man. All the rest of the volume, some 220 pages, is given over to index and appendices. One of these latter furnishes interesting legislative data regarding European classification and preservation of antiquities; another lists the principal art objects and the sites at which they were obtained; while the third and most valuable gives, in brief outline form, all the important archaeological stations which have yielded stratified remains, together with notes on their discovery and

exploration, as well as citations of the principal bibliographic references pertaining to each.

A work of such scope and size as the above is entitled to more extended and judicious comment than the reviewer is in position to accord at the present moment. I have faithfully read it through; but as I have never done as much for the similarly comprehensive treatises by Déchelette and Hoernes, I have no clear conception of what it may be right to expect. What is a manual, a handbook, a summary treatise? For whom, precisely, is it written? It happens that I have already found this work useful in connection with the classification of certain museum specimens; but I trust that for every museum man who is likely to use it in this country the work will be perused by some thousands of university students and general readers. In other words, I take it that the presentation is designed to serve the wants of the great mass of intelligent readers who have no access to actual museum collections but who, for a correct idea of the data considered, must rely on illustrations. That being the case, one is moved to say that in spite of the liberal and generally judicious use of illustrations, something further is still to be desired along that line, especially in the second volume.

Broadly stated, the textual and illustrative presentations in the second volume are both much less complete and systematic, as well as more uneven in quality, than is the case with the first volume. Some important, i.e., chronological guide types of artifacts, are not illustrated at all; while certain other types are perhaps over-illustrated. This is noticeable from the Azilian-Tardenoisian chapter onward. But there are places also in the first volume, such as on page 92 or 93, where a diagram seems badly needed to illustrate the relations of deposits there cited. To compensate for such additions, one of the two illustrations of the Tuc d'Audubert cavern entrance, e.g., could well be omitted. In place of illustrations some sort of table showing the time of appearance of new implements might serve.

The author, obviously, has had some difficulty or has been uncertain with regard to the proper treatment of his subject from the end of the Magdalenian culture onward. It does not seem quite correct, for instance, to group the Campignian with the Azilian-Tardenoisian. The one culture was hardly derived from the other: there was a hiatus of some sort between them which is yet to be explained. Again, in treating, for example, of the Iron Age, the data, say for Sweden, receive no mention, the facts considered being

derived almost entirely from central Europe, including Switzerland and France. No doubt the difficulty of handling at once so many localized cultural variations is great; nevertheless, striking similarities are also present, sufficient at least to give uniformity to several general changes passing over the whole of Europe—as for example burial methods—and should receive due consideration. As for the differences or the contemporary modifications involved, these could profitably have been set forth either by illustrations or else by brief tabular schemes. But as a matter of fact the volume affords ample room for textual treatment, if necessary at the expense of certain of the appendices.

Of minor errors of omission and commission it is not necessary to write here in detail. Slips, typographical and otherwise, are comparatively few. One may, however, question the advisability of some of the French terminology which has crept in, such as *couche*, *mélange*, *non-remanié*, *pression*, *champhère*, etc. On the other hand, Dr. MacCurdy's new interpretation of *coup-de-poing* as "cleaver," while suggestive, can probably do little more than add to our bewilderment. I note the omission of reference to shell-mounds in the introductory chapter and have been told of the omission also of certain important Paleolithic stations in Austria. For myself, I regret the omission of some introducing note or paragraph to the chapter on Eoliths—something to help the general reader appreciate the significance of the facts he is about to encounter. I question the correctness of the introduction of the horse into Egypt as early as 2300 B. C.; likewise the spelling of "pole" as referring to axe blades; and also the propriety of devoting several paragraphs to a description of the Ipswich skeleton and its discovery, the whole to be dismissed in the last sentence by the statement that the discoverer has withdrawn his claim and the find is in the discard. Lastly, the omission of specific bibliographic references will probably be regarded as a serious fault by many. But after all, in a work which probably contains more well-ascertained facts than any other ever written on the subject, some defects and errors are to be expected.

Taken as a whole, Dr. MacCurdy's work impresses one primarily as a presentation of facts. This is precisely what it seems to me a manual should be; and it is as such that it fills a distinct want. Interpretation is a very desirable thing, no doubt; but we have already several books of that type and may expect many more, for those are comparatively easy and pleasant to write and, as a rule,

correspondingly ephemeral in value. So, while one may register disappointment that the author did not come out in the open to tackle, for example, Reid Moir and his extraordinary revision of Paleolithic and pre-Paleolithic chronology in its relation to geologic chronology, on second thought it seems as well that he should not have committed himself on topics still under discussion. Indeed, if the work under consideration is open to criticism, it is in reference to occasional seemingly too positive interpretations, such as a thorough-going ethnographer would avoid.

N. C. NELSON

The prehistory of man—the study of his physical, mental, and cultural development through the ages preceding the earliest recorded history—may well claim a place among the younger sciences, seeing that a century has not yet passed since it received general recognition as an accredited subject for serious scientific research. Nevertheless, the subject is of such general and commanding interest, its followers so eager and untiring in their efforts to trace the dim back trail of humanity, that every succeeding decade adds appreciably to our knowledge, and thus, in the course of a few years, the earlier accounts are rendered incomplete or even antiquated, and there is a constant demand for the latest results of investigation. A welcome addition to the most recent literature on this subject is the *Human Origins* of Professor George Grant MacCurdy of Yale University, who, in the two volumes of this “Manual of Prehistory” has summed up the results of nearly thirty years devoted to research, personal observation, and excavation in the European field. In the first volume he discusses “The Old Stone Age and the Dawn of Man and His Arts,” devoting chapters to the development of prehistory, the chronology of the Glacial Epoch, the industrial stages of the Eolithic and Lower, Middle, and Upper Paleolithic periods, Paleolithic art, and fossil human remains. The second volume deals with the transition from Paleolithic to Neolithic, and the Neolithic, Bronze, and Iron Ages, including contemporary human skeletal remains.

In discussing fossil man Professor MacCurdy speaks but slightly of the attempted reconstructions made by other anthropologists. He admits that they may serve to stimulate interest, but feels that they are apt to be misleading, and are at best “a mass of hypothetically coordinated details superficially stamped with all the precision

of a genuine portrait." There is no doubt that, as he says, "both by inclination and training we are more critical of human representations than of any other," and no one will deny that in such reconstructions the size and shape of the mouth, lips, ears, and soft parts of the nose, color and texture of the skin, blondness or brunetness, character and abundance of hair, are all matters which can only be hypothetic, as there is no satisfactory evidence. Nevertheless, when it comes to modeling the top and back of the head, the slope of the neck behind the ear, the brow, temple, cheek, and chin, the artist is on sure ground, and who shall say that he does ill to complete the picture by supplying the remaining parts and thus offering a suggestion as to what the whole might be, so long as he is careful to make it clear where fact ends and conjecture begins?

In truth, Professor MacCurdy's *Human Origins*, or any other manual of prehistory, is neither more nor less than just such a reconstruction, in which the known facts are recorded, and the gaps pieced by conjectures and hypotheses worked out after cautious and painstaking study. In western Europe a homogeneous succession of industrial stages has been demonstrated, and a number of human fossils of Pleistocene age have been found associated with faunal and cultural remains. Amazing specimens of Paleolithic art have been discovered—both portable and stationary—in many cases under such circumstances as to preclude assigning them to any later date. With these known facts for foundation the prehistorians have spared no effort to build up a convincing picture of the life and development of primitive man. The religion and psychology, the tribal organization, industries, cults, and practices of existing primitive peoples have been studied, geographic and climatic changes of Pleistocene time have been considered, evidence afforded by the fauna and flora of the glacial and interglacial stages has been weighed, and from all this has been developed a hypothetic reconstruction of the probable environment and nature of prehistoric man. And again we ask, who shall say that this is ill done, or be other than grateful for the effort that sought to give us, as far as possible, a faithful portrait of our forebears?

In common with many other prehistorians, Professor MacCurdy seeks to harmonize the fourfold evidence of geology, paleontology, archaeology, and anthropology in regard to prehistoric chronology and environment. It is obvious that each of these four sciences has essential evidence to contribute concerning the past of humanity—the

extent, character, and climate of the land in which man lived, the animals that he hunted or that hunted him, the tools and weapons that he used, and his physical structure. But it is to be regretted that this wholly praiseworthy attempt to correlate the evidence of four separate sciences should have introduced an unfortunate confusion of terms. Such phrases as "Eolithic race," "Mousterian fauna," "Cro-Magnon mural art," are frequent in the literature of prehistory, but they do tend to obscure the force and bearing of the evidence adduced. Let us hope that a time may come when the names of geologic periods, Pleistocene faunas, industrial stages, and human races will no longer be interchanged.

In the chapter on the Ice Age it may be noted that the *nevé* is the field of closely packed, granular snow which is the source of a glacier. It is not the glacier proper until it has been subjected to sufficient pressure to change it into ice, after which it is no longer *nevé*. Of course the *nevé* lies above the snow line, and sometimes part of the glacier as well. But the difference between the *nevé* and the body of the glacier is not a difference in elevation but a difference in compactness of texture—the difference between packed snow and solid ice. Professor MacCurdy is so up to the last minute in regard to the postglacial phases in Scandinavia according to the recent researches of De Geer and Antevs, that it is somewhat of a surprise to find him retaining the Laufen retreat in his chronologic calculations. It would also obviate confusion if the chronologic tables given on pp. 26-27 showed that Holocene and Pleistocene are two subdivisions of the Quaternary, and Tertiary and Quaternary two subdivisions of the Cenozoic.

The existence of a "Warm Mousterian" is a debatable ground for prehistorians. The Warm Mousterian stations named by Professor MacCurdy are at Montières, Villefranche-sur-Saône, La Ferrassie, La Micoque, Laussel, Grimaldi, Krapina, Taubach, Ehringsdorf, Cotencher, Drachenloch, and Wildkirchli. The three last-named sites are in Switzerland well within the limits of the last Pleistocene glaciation. The grotto of Cotencher was over 1300 feet below the extreme elevation of the Rhone glacier during the Würm maximum. At all three stations the industry and faunal remains were similar. The industry has been called Mousterian but is not typical. Professor MacCurdy classes it as such, and assumes that these stations could not possibly have been occupied except during a warm interglacial stage. But surely even the severities of a glacial

stage could hardly have offered insuperable difficulties to hardy Paleolithic hunters adventuring into the mountains in summer in quest of food. The game they hunted consisted almost entirely of cave bear, and it would seem that the evidence afforded by the position of the stations and by the cultural and faunal remains is insufficient either to prove or disprove the existence of a "Warm Mousterian." The industry found associated with human remains at Krapina, Taubach, and Ehringsdorf has been variously identified as Chellean, Acheulean, and Mousterian. It is agreed that it is not a typical and unmistakable Mousterian. Therefore no positive conclusions in regard to a Warm Mousterian can be drawn from the associated fauna. As to Grimaldi, it might reasonably be expected that even during a glacial stage a warm fauna might manage to survive at so sheltered and southern a site. The list of Warm Mousterian fauna on p. 142—which presumably applies to all the stations cited, including those in France—names the elk, bison, beaver, roe deer, cave lion, and wild boar, none of them especially characteristic of a warm climate. Five other species listed appear also in the list for the "Cold Mousterian." There remain just three—*Elephas antiquus*, *Rhinoceros merckii*, and *Hippopotamus*. The present habitat of these genera is in a warm country, but observers tell us that, like many other large mammals, they are comparatively indifferent to cold. To what degree the Pleistocene species named above were tolerant of cold we do not know, nor can we do more than guess at the summer temperature of the Somme and Saône valleys during glacial times. It would therefore seem that as yet the case for the "Warm Mousterian" is not proven. It is a hypothetical feature of the prehistoric reconstruction.

Quite the contrary is the case of the cold fauna accompanying the Mousterian, and the succeeding Late Paleolithic industries. Here the prehistorian has abundant indisputable evidence for the presence of an Arctic-Alpine fauna associated with human cultural and skeletal remains.

Again, the association of Heidelberg man with the Pre-Chellean industry is purely hypothetical. There is no evidence either to prove or disprove the possibility. On the other hand, the association of Neanderthal man with Mousterian industry, and of Crô-Magnon man with Aurignacian industry, is beyond dispute.

In describing the fossil human remains it is unfortunate that the skulls pictured were not posed according to the Frankfort convention,

so that the actual degree of prognathism and other features mentioned in the text might have been more apparent. The Brunn skeleton could hardly be referred to the Aurignacian merely on account of its being stained with ocher, for the mortuary bed of ocher occurs in sepultures of Aurignacian, Solutrean, Magdalenian, and Azilian times, as Professor MacCurdy himself shows. The character of the associated artefacts would be a more reliable basis of diagnosis.

It is in the diagnosis of artefacts, the description of implements characteristic of the various cultural phases, that Professor MacCurdy excels. His chapter on the Eolithic Period is conspicuous for its clear and conservative presentation of a very difficult subject. The same conservatism marks his discussion of "figure stones" in the opening of his chapter on art. Indeed, in all the text relating to cultural and artistic remains one feels that he speaks of what he has seen and handled, and the caption of many an illustration closes with "Photograph by the author." The successive Paleolithic industries are fully and understandingly described. Perhaps there is too much emphasis laid on the cultural change from Mousterian to Aurignacian. It is one of the puzzles of prehistory that the great changes effected at this time—the change from the Neanderthal to the Crô-Magnoir race, the introduction of an extensive industry in bone, and the birth of art—should coincide with a natural and apparently gradual evolution of the Mousterian stone industry into the lithic types of the Aurignacian. Here alone there would seem to be no pronounced break. The chapter on Paleolithic art, beside the descriptive text, includes admirable classified lists of the various subjects, and the sites where they are portrayed.

The second volume, dealing with the transitional industries and the Neolithic, Bronze, and Iron ages, is of necessity limited to a very sketchy and general treatment. When man ceased to be dependent on hunting animals for food, and herded and pastured them instead, when he learned to supplement this food supply with cultivated plants, he bound himself as never before to a settled habitation. And thus, from the comparatively homogeneous culture of the Old Stone Age there developed numerous local phases during the succeeding ages of Polished Stone, of Bronze, and of Iron, each with strongly marked characteristics and following its own line of evolution, which makes the task of synchronizing them a difficult one. Moreover the cultural and skeletal material for these periods is so abundant as to demand many volumes for even a brief description. Professor

MacCurdy has achieved a brilliant success in effecting the necessary condensation, and nevertheless contriving to present the most important features of man's industrial and social evolution from the close of the Old Stone Age on to the dawn of history. These offer problems of interpretation quite as perplexing as any found in the earlier stages, as, for instance, the designs from Gavr'inis and the Table des Marchands pictured in figures 301 and 302, which MacCurdy takes for representations of a hafted ax, and a shield ornamented with ax handles. Other observers see in the design from Gavr'inis a primitive plow, and explain the groups of "ax handles" on the supporting stone of the Table des Marchands as conventionalized blades of wheat. The latter view is somewhat helped by the fact that a disk with rays, supposed to represent the sun, is indicated in the middle of the "wheat stalks." This does not appear in MacCurdy's figure reproduced from de Mortillet, but is clearly seen in a photograph of the same stone by le Rouzic (1910). A few phrases, such as the "prow lines of the stern," or "some rodent, probably the marten" are obviously oversights such as will at times escape the vigilance of author and editor and slip into the best regulated book.

To sum up: Professor MacCurdy's account of prehistoric man does not always make clear the part that rests upon indisputable evidence, and the part where the insufficient evidence has been pieced with hypothesis and conjecture. In this respect it will present grave difficulties to beginners in prehistory, not yet familiar with the nature of the supporting evidence. On the other hand, the exceptionally ample and accurate lists and classifications of sites given throughout the text and in the appendices are invaluable, not only to beginners but to everyone who has occasion to verify localities or references.

No report on *Human Origins* would be adequate that failed to do justice to the extraordinarily sympathetic comprehension with which Professor MacCurdy pictures some of the salient features of man's early development. Take, for instance, this passage from his chapter on Paleolithic art:

From the standpoint of priority of antiquity then, the artist has special reason to be proud. He follows a calling that had its worthy devotees ages before any other method of leaving imperishable records of human thought was known. Man was artist before he was the maker of even hieroglyphs; he tamed his imagination and his hand to produce at will objects of beauty long ages before he tamed the first wild beast or made the humble plant world

do his bidding. The farmer, whose calling we are apt to think of as representing the life primeval, is a mere upstart in comparison with one who practices the fine arts.

Both Professor MacCurdy and the readers of "Human Origins" are to be congratulated on this new, vivid, and scholarly reconstruction of the life and environment of prehistoric man.

C. D. MATTHEW

Medicine, Magic and Religion. (The Fitz Patrick Lectures delivered before The Royal College of Physicians of London in 1915 and 1916.) W. H. R. RIVERS. With a preface by G. ELLIOT SMITH. New York: Harcourt, Brace and Company, 1924. VIII, 147 pp.

The major part of this little book presents a history of primitive and early medicine. It shows the late Doctor Rivers at his best, and we must all feel indebted to his literary executor, Professor Elliot Smith, for having rescued these fugitive essays and made them generally accessible. So far as I know, this is the only serious attempt to characterize the major areas of the globe with reference to theories of disease and the correlated practices. A pioneer effort of this sort is bound to err on particular points, but Rivers's sketch remains a highly creditable undertaking.

The most serious mistake I have noted relates to the distribution of the belief in soul-kidnapping as the cause of illness. Rivers thinks that it is limited to Indonesia, Papuo-Melanesia, and America, with traces in West Africa, but writes: "We do not know of it in Asia" (p. 79). The fact is that it is prominent among the Chukchi; and likewise, I learn from Doctor Sternberg, among Mongolic and Turkic peoples. In view of Doctor Rivers's implicit rather than expressed tendency to connect American and Indonesian culture, the *continuous* distribution of the trait on both sides of Bering Strait is a phenomenon of considerable significance. In general, Doctor Rivers's exposition of most points in this book is characterized by commendable restraint, though the very formulation of certain questions—for instance, as to the single or multiple origin of Four as a sacred number (p. 88)—indicates his sympathies.

The distribution of the sweat-bath in Melanesia, New Guinea, Polynesia, Africa and America, as well as in Northern Europe, (p. 102) is certainly highly suggestive and merits closer study. It may be worth pointing out that the sweat-bath is not always a *vapor*-bath

in America, as Doctor Rivers seems to assume. Altogether the treatise suggests many special inquiries of ethnographic interest and contains much valuable detail on the Oceanian area with which the author was particularly conversant.

ROBERT H. LOWIE

AMERICA

The North American Indian. EDWARD S. CURTIS. Volume XII: The Hopi. 1922.

Among all the voluminous ethnographical literature concerning the Hopi there has been till now no orderly survey of their complex culture. It has been the simplest things about their life that one learned last of all, accidentally usually in the mass of specialized ceremonial detail. It is only with the publication of the latest volume of this series sponsored by J. Pierpont Morgan, *The Hopi*, that this is ended. The book is a clear and observant record of the various aspects of their life.

It is of course as beautiful a volume as our libraries boast, and one that is written lucidly and with competence. From an anthropological point of view it performs two major services: it is, first, that much needed summary of a Pueblo culture, the only one that has ever been done that will serve as an introduction to their habits of thought and is yet of such completeness as to be ethnographically of value; second, it contains a very considerable amount of new or variant material of comparative interest.

As a summary of a Pueblo life it is as successful as a strictly descriptive book well might be. The account of the katchina cult, for example, (pp. 170-177) with the generalized description of procedure and its intimate association with the kivas, is admirable. It is just such an account as a sympathetic and intelligent inquirer has need of. The shortcomings of the book as an introduction to Pueblo life arise as a defect of its virtue, for it is wholly descriptive, and it does not make any attempt other than lucidity of statement to guide the student through the unaccustomed mazes. It would have made the large patterns of their culture clearer to set off the katchina cult, for example, somewhat definitely from their other fraternity-organized activities of curing and weather-control; and it would be helpful to find an analysis of the various organizations of the kiva, and the

fraternity, and the clan in their several functions in everyday life. Such a plotting of distinct activities and thought-patterns is outside the scope of the book.

This straightforward setting down of information, on the other hand, makes the ethnographical information exceedingly easy to use as comparative material. The account of his initiation by the only surviving member of the Poswimi, the extinct curing-society of medicine-men, fills an important gap in the so-far recorded material. This society was made up of a very small number of initiated medicine-men who met at the time of the winter solstice ceremony, "looked through people" in the performing of their cures, and initiated by clapping a crystal "heart" into the breast of the initiate. The likeness to the practices of Zuñi and eastern Southwest curing societies is borne out also in the choir of five who sang for them at their ceremonies. Some relative of the newly-initiated medicine-man was supposed to die in consequence of his initiation.

The clan data presumably refer to Walpi alone, and in view of the wide discrepancies in the various pueblos, it would have been helpful to have had it specifically assigned to this village. The date at which it was collected would also have been valuable, for Mr. Curtis and Mr. Myers made their first trip to Hopi in 1900, and have gathered material at intervals ever since. We have the list published by Dr. Fewkes in 1900, and a recent unpublished list of Dr. Parsons, and a comparison of the three emphasizes the stability of the native groupings of the linked clans. In all three lists there are some singly-mentioned variants that do not occur in the others, but the main alignment into twelve groups of linked clans is stable. The main divergence of the Curtis list from both others is its omission, for the Bear group, of the usual linked Bluebird-Spider group, and the substitution of Hemlock.

Hopi proper names are clan-owned, but they are not the property of the clan of the man or woman who bears the name, but of the clan of the man or woman who bestowed it. Curtis has included a valuable list of 120 names with their translation and clan-ownership, and the clan affiliations of the person who bears the name, both on his father's and his mother's side. The majority of the names are given by the father's clan, and in some groups this is overwhelming. Of twenty-eight names owned in the Tobacco-Rabbit clan, twenty-six are borne by children of Tobacco men. Nevertheless in a total of 120 names

recorded, only 77 are borne by "children of the clan." In Sichumovi, at least, according to Dr. Parsons, the person bestowing the name is the ceremonial father who takes the child through the Powamu whippings, and initiates him into his own New Fire Society. If this is true also in Walpi, it will give a valuable indication of the relative frequency of different methods of affiliation with these societies. It seems that in Hopi theory the ceremonial father is from the maternal household of the father, but we know also that a sick child may be "given" to a person of unnamed affiliation to be initiated by him, if the child is cured, into the New Fire society of which he is a member. The trespass initiation is recorded also. The bearing of all these upon the clan-owned name should be enlightening.

This table of clan names is recorded in connection with a genealogy of 221 names, which was used in the gathering of kinship terms. Not only the use of these which accords with native theory is given, but also the secondary applications as shown by the terms which were applied to each other by the persons in the genealogy.

Confirmation is given of the practice of removing the fangs from snakes before the Snake dance. The method is that described in the confessions owned by the American Museum of Natural History. As a whole the descriptions of ceremonial are valuable as introductions, rather than as adding to already known detail. Some things of considerable significance escaped the attention of the authors, such as the clan basis of organization for the winter solstice ceremony.

The volume contains also valuable mythological material. The clan myths, compared with those already published and with Miss Ruth Bunzel's manuscript, are in their diversity of incident a self-sufficient rebuttal of their historicity. Among the incidents of the other tales never before recorded for the Hopi is the omnipresent Pueblo story of the marriage-test in which the fine-ground meal must adhere to a polished shell; and a well-acclimated variant of the northern incident of compassing your enemy's death by a contest in swinging from a tree that snaps back with great force.

All anthropologists are under a debt to Mr. Curtis and Mr. Myers for this volume, and we must regret that it is so rare and precious a book as not to be available for ready use. It should be accessible not only to anthropologists, but to their students, and to all who are interested in a complex and integrated culture.

RUTH F. BENEDICT

Shoshone Folk Lore. SARAH EMILIA OLDEN. Morehouse Publishing Co., Milwaukee, Wis.

The hopes that are legitimately raised by this title are not even known to the author. It contains no folk-lore and its desultory observations on Indians and missions are poorly reported.

R. F. B.

An Introduction to the Study of the Southwestern Archaeology. Papers of the Southwestern Expedition No. 1, New Haven, 1924. A. V. KIDDER.

Dr. Kidder's book is a vivid reminder of the progress which has been made in the archeology of the Southwest during the last fifteen or twenty years. The foundation for this work was laid somewhat earlier by Bandelier, who during the years 1880-1886 explored the Southwest for the Archeological Institute of America. The Hemmingsway Expedition to the lower Salt River was made in 1887-8. The Mindeleffs, Mr. Pepper, and Dr. Fewkes did much pioneer work. The new era, however, began with Dr. Kidder and Mr. Nelson in the Rio Grande region. The first main problem was to separate geographical variations from historical sequences, and chiefly on the basis of pottery. Dr. Kidder obtained noticeable results in the Pajarito region and Mr. Nelson worked out the first satisfactory sequence in the Galisteo Valley. Later both these men covered practically the whole of the Southwest. In time it is probable that both would have presented pretty complete solutions of the development of culture in this region if circumstances had not diverted Mr. Nelson to other problems. To the aid of these pioneers came Earl H. Morris in the San Juan region, Leslie Spier in the Little Colorado, and Neil M. Judd in the Chaco Canyon. Working more or less with Dr. Kidder, Guernsey made important contributions in the region of northern Arizona and southern Utah.

The results of this work are presented in this preliminary publication of a series that will deal in particular with the excavations at Pecos. The first part gives the available history of Pecos beginning with the Coronado Expedition in 1540 and following the course of events until the village was abandoned in 1838. Part Two gives an account of the excavations at Pecos for Phillips Academy continuing through the six seasons from 1915 to 1922 (1918 and 1919 being

omitted because of the war). Part Three begins with a concise description of the modern pueblos and then takes up the prehistoric ones in geographical order: the San Juan, Northern Peripheral District, the Little Colorado, the Upper Gila, the Mimbres, the Lower Gila, the Chihuahua Basin. The architecture and pottery of each province are described and characterized with interesting comparisons especially as to contemporaneity. These presentations are greatly aided by the numerous illustrations and maps. The well-selected series of pottery designs in particular make comparisons easy.

It is in the San Juan region that historical sequences are particularly well worked out. The distinctions between Basket Maker, Post Basket Maker, Pre-Pueblo, and Pueblo are now pretty well determined for dwellings, clothing—especially sandals—and pottery. The Pueblo period is probably susceptible of historical subdivision but here there is still some confusion between local variations and time sequences. The main differences between Mesa Verde and Chaco Canyon are certainly for the most part local. It is this determining of sequences by careful observations and analyses that crowns the archeological work in the Southwest. This is at the same time brilliant and accurate. It is also a fine example of cooperative effort. There has been constant consultation between the various workers in the field with a frank sharing of new facts and theories. Petty jealousies are conspicuous by their absence.

Besides the San Juan and Rio Grande regions in which the main historical results have been obtained notable work has been done in the Little Colorado, Kroeber, Nelson, and Spier have made general surveys. Spier by clever analysis has been able to determine the order in time in which the various ruins in the neighborhood of Zuni were inhabited. Mr. F. W. Hodge during his excavation of Hawikuh for the Museum of the American Indian Heye Foundation has been able to trace back from historical times the changes in pottery, burial customs, etc.

To the south very little is known. Museums have collections of fine pottery from the Upper Gila and Mimbres Valleys but information as to these regions is very scanty. From the lower Gila and Salt Rivers both specimens and facts are few. The Peabody Museum at Harvard has the results of the Hemmingway Expedition concerning which the publications were meagre. This region should prove a fruitful field because it lies along one of the roads to Mexico, and may have received early influences from the South.

Part Four is devoted to conclusions. Dr. Kidder sketches historical changes from a postulated non-agricultural, nomadic people to the highly concentrated community life represented in Chaco Canyon and the Pajarito plateau. He leans toward the pressure of alien tribes from the north and east for an explanation of this concentration of population and the final abandonment of large areas. There are no evidences of any considerable changes in the rainfall or climate of the Southwest. It may be more stress should be put upon the economic advantages of community life and the advancing knowledge of agriculture which led to the irrigation of the less elevated regions in the place of isolated dry farming in the mountain valleys. The changes in historical times were due to the raids of non-pueblo peoples and it is sound to postulate the same cause for more remote movements. The penetration of the Navajo in the north and the Apache in the south may well explain the deserted ruins in Chaco Canyon and the upper Gila.

The making of time estimates by Dr. Kidder and others for prehistoric events in the Southwest seem to me hardly justified. There is at present no basis for a reckoning in years. The assumption that the development of American culture and the great linguistic variation in the two continents have resulted since the retreat of the last ice cap far enough to open a road across Behring Sea is untenable. The ruins of Mexico Valley, the Maya region and the Andes may be recent, but beneath all these lies the long upward struggle of the beginning of agriculture and the arts.

The book is most welcome for the summary of Southwestern archaeology which it furnishes. It should stimulate further work of the same sort in the less well known portions of the Southwest and then the cry should be: "on to the South." What lies between the pueblos and the Valley of Mexico? Even without historical records it will eventually be possible to write a fairly full account of what has happened to man in America.

P. E. GODDARD

The Art of Old Peru. Edited by WALTER LEHMANN, assisted by HEINRICH DOERING. Publication of the Ethnological Institute of the Ethnographical Museum, Berlin. English Translation published by E. Weyhe, New York, 1924.

Among the several sumptuous albums devoted to Peruvian art which have appeared within the last few years, none is more magnificent than the present work, a quarto volume of quasi-de-luxe appearance consisting of twelve colored and one hundred and twenty-eight collotype quarto plates, sixty-three half-tone text figures and sixty-eight pages of text, admirably printed on excellent paper. The text consists principally of a twenty-eight page paper on "Historical Survey," with four pages of notes by Dr. Lehmann and a fifteen page paper on "Land, People and Monuments" by Dr. Doering. Titles, preface, map, list of plates and bibliography account for the other twenty-one pages. Two large chronological tables complete the total.

It is primarily as an album of choice examples of Peruvian art that this publication lays claim to the interest of students of American art and archeology, and on this score alone it deserves a place in the library of each. Its value is enhanced to the latter because of the fact that most of the specimens figured have never before been published, the majority of them pertaining to the famous Gaffron private collection.

More than half of the plates, both of tapestry and pottery, have been taken from pieces of the choice Gaffron private collection in Schlachtensee. All the photographs from this collection show pieces which up to now have nowhere else been published. Similarly the great majority of the pieces from the rich collections in the museums in Berlin, Munich, New York and London are reproduced here for the first time in large plates. (p. 56.)

The majority of the rest of the plates are from specimens in Germany, and other private collections, such as the Sutorius collection of Stuttgart, are well represented, thus affording a wealth of hitherto unpublished material to students on this side of the water. All of the color plates, which illustrate mainly textiles, are from the Gaffron Collection. The colors are admirably reproduced, and one cannot but regret that the great expense involved prohibited the reproduction of at least all the textiles in this form. In view of the enormous amount of suitable and available Peruvian material, the editor has done well to select principally specimens never before figured.

In the present work an attempt is made to choose from the wealth of the antiquities of Peru pieces of different periods and cultural spheres which are artistically important as well as archeologically significant. In this way, not only the narrow circle of specialists, but also all friends of true art, will be able to receive a living impression of the abundance, the individuality and the high quality of the creations of the spirit of Ancient Peru. (Preface, p. 5.)

The editor has apparently been most successful in his choice, though doubtless every Peruvianist will regret the omission of certain favorite pieces. Practically all the plates are devoted to pottery, textile, stone, wood and metal objects, only one-ninth picturing architecture. In several instances, obviously with the purpose of figuring the object as large as possible, the photograph has been trimmed too close and a better artistic effect would have been secured by illustrating the entire object with suitable margin. The editor's penchant for Nazca pottery is evidenced by his selection of thirty-six pieces of Nazca ware as against, for instance, four from Ica, a preponderance hardly justified on either artistic or archeological grounds. Chancay and Ancon are similarly slighted, but with more justification. One misses on the map the locations of the proveniences of several specimens figured, such as Ancon.

A few minor errors in numbering and translation mar the otherwise excellent effect. The error in numbering plates 5 to 10 is noted in an accompanying erratum slip, but other errors in referring to "upper, lower, right, left" may be confusing to the conscientious reader. The animals figured on plates 46, 50 and 62, obviously frogs or toads, are termed "tortoise," possibly a mistranslation from the German.

The two accompanying papers by Lehmann and Doering are of an importance secondary to the plates and of interest principally to archeologists. Both are on the whole excellently translated with relatively few instances of stilted construction or poor choice of words. The translator should have been among those named and thanked in the preface.

Dr. Doering approaches the topic from the viewpoint of the artist. He analyzes the temperaments and peculiarities of the art of the several regions and finds that they reflect characteristics of climatic environment, the art of the torrid coast being imaginative and temperamental, that of the Aimara of lofty Tiahuanaco cold, restrained and impassionate, that of the Incas of Cuzco intermediate in temperament as in location, moderate, conservative and noble. In the massive regular Inca architecture he sees the embodiment and manifestation of the Inca state. He finds more individuality on the north coast, more conventionalization on the south coast.

Dr. Lehmann's "Historical Survey" is of interest to the archeologist rather than to the artist, though he also analyzes the spirit and nature of the artistic forms of the various regions and culture levels,

but rather from the historical standpoint than as the manifestation of national psychology. The artist unfamiliar with the topic of early America will find the paper a mine of information on pre-Columbian American historical relations, if a little confusing since the mass of material is poorly organized and unsystematic. It breathes the enthusiasm and vivid interest of the author. The Peruvian specialist also will find in it a tremendous fund of suggestion, more or less valuable. The article hardly pretends to be a properly developed scientific monograph, and the author does not attempt to prove any thesis, merely drawing on his great fund of knowledge of American archeology, and noting resemblances with every part of America on every possible topic. Some of the resemblances and analogies thus pointed out will not be accepted as valid by conservative archeologists, but they have their value as suggestions for consideration. They are too numerous to select and comment upon in particular. A large part of the paper, concerning the prehistoric relations of Mexico and Central America, while of great interest, seems hardly in place in a work on Peruvian Art.

The footnotes are many and full, but an unfortunate error in references destroys the correlation of footnotes 24 to 45, leading to the greatest confusion. The absence of references in text to plates and figures is also a lamentable omission.

Two tables of chronology complete Lehmann's text. Table A attempts a correlation of epochs, forms of thought, artistic styles and representative tribes and peoples. It is a valuable piece of work, one of the best of several such chronological tables which have been published by Peruvianists in the last few years. While accurate stratigraphical researches in Peru are still pitifully few and one of the great desiderata of American archeology, yet sufficient detailed studies have now been made to render the preparation of such chronological tables no longer premature but rather distinctly welcome as tentative hypotheses for discussion. The actual dates in terms of years given in the present table are well within possibility, but any assignment of actual dates on such slight evidence as Peruvian archeology offers at present is an attempt at which more conservative students have heretofore hesitated.

Table B is larger, fuller and more complex, a rather daring temporal and geographical cross-section of the entire field of Latin-American archeology from the Toltecs and Huastecs to the Calchaqui, involving considerations of language, artefacts, artistic styles,

migrations, traditions and mythology. While the many suggestive resemblances, culled from the author's unexcelled fund of knowledge of Latin-American archeology, are highly inspiring, the table as a whole suffers from over-complexity and would have been more impressive if the field of research had been more restricted. As before, the dates are reasonably conservative, and the table as a whole probably as good and complete as the all-too-meager data permit.

"The Art of Old Peru" is a work primarily for artists and students of primitive art, but of maximum importance as well to archeologists, both because of its wealth of otherwise unpublished objects and of suggestive discussion.

J. ALDEN MASON

ASIA

The Panchatantra Reconstructed. F. EDGERTON. American Oriental Series, vols. 2 and 3. American Oriental Society: New Haven, Connecticut, 1924. 408 and 405 pp.

The purpose of this work is to reconstruct the parent work from which are derived those collections of tales known as the Tantrākhyāyika, the Hitopadesa, the Kathāsaritsāgara, and the rest. The method is essentially the same as is pursued in collating manuscripts; there is this difference, however, that the derivatives do not strive to reproduce word for word the lost original; they retell and rearrange the original to suit the editor's taste. The author may follow the original fairly closely, or he may, like Somadeva, turn the whole into verse and retain only the substance. It is not therefore merely a question of eliminating clerical errors; but of determining what parts the existing tales reproduce verbally from the original, and what parts have been rewritten.

To this task Prof. Edgerton has brought a stupendous industry. He has compared every sentence of his ten derivatives, and further has had to collate the various manuscripts of the same derivative in order to establish his text. This minute analysis has not, however, impaired his judgment and he frankly admits that his reconstruction is only approximate. How approximate is clearly shown by the use of italics and brackets. The italics "indicate matter of which we cannot be sure that it literally corresponds to the original text." When we consider the amount of italics, often whole pages together,

with a sprinkling of certainties, one cannot help wondering whether the result justifies the enormous effort. In scholarship we must keep the end steadily in view. The author does indeed seek to justify his labours by pleading that "it must be worth while to recreate the original form of a work that has enjoyed such enormous popularity." To recreate it with certainty, perhaps; but since the exact text is largely doubtful the reconstruction will never be used as an authority; it is not likely ever to be quoted in support of historical studies; the existing derivatives will always be referred to because they are books that were actually written. Even if a certain reconstruction were possible it would scarcely possess the interest that would attach to a reconstruction of the original Mahabharata or Ramayana. The author is prepared to admit that the original work was as late as the fifth century and not earlier than the Christian era. The interval separating it from its derivatives is not so great as to make a profound difference in the opinions and customs of the times. In point of fact we shall find that the variations bear on words and phrases rather than on ideas that interest the student of customs. This is not to be wondered at since animal fables are singularly poor in information about customs, and I doubt whether the student could cull from Aesop or La Fontaine anything which he could not gather in less time and more fully elsewhere.

The translation makes excellent reading; in fact it might be criticized for making better reading than the original. The author has aimed at lightening the style, but in so doing destroys one of the characteristics of the classical Sanskrit, its fondness for interminable compound adjectives; they express what the best ages of any literature would put into a separate sentence, if they did not omit it altogether. By making them into separate sentences the author gives the reader who does not know Sanskrit the impression that the original was much more natural and popular than it really was. For instance paragraph 2 on page 271 appears in the translation as four sentences; but in the original it is only one, the last three sentences of the translation representing as many compound adjectives, one of them consisting of twenty-seven syllables!

By an awkward convention in the text contracted vowels are shown by the same sign as an elision. Thus *celi*, for *ca iti*, is written *ce'ti*, as if the first *i* were elided, whereas it has fused with *a* into *e*. Contraction could more suitably have been expressed by a circumflex.

The orthography is modernized: *enuf* for *enough*, *huskt* for *husked*,

thru for *through*, to all of which no exception can be taken, but one would expect *thot* to rhyme with *not*.

The type and general get-up are excellent.

A. M. HOCART

ANURADHAPURA, CEYLON.

Growth of Chinese. S. M. SHIROKOGOROFF and V. B. APPLETON.

Reprinted from The China Medical Journal, May, 1924. 14 pp., 4 tables, 6 figs.

These observations on weight and stature of more than a thousand Chinese children of the Eastern Provinces are a distinct addition to the scanty data from China. Averages with maximum and minimum instances in each age class are given. It is of importance to have some other expression of variability as well, or the seriations for each age from which these might be calculated, but these are not included. I have calculated the following increments and rates of growth.

Age	INCREMENT				RATE OF GROWTH			
	Male		Females		Males		Females	
	Weight (Pounds)	Stature (Inches)	Weight (Pounds)	Stature (Inches)	Weight (Percent)	Stature (Percent)	Weight (Percent)	Stature (Percent)
3	3.98	3.14	4.32	2.97	14.7	9.3	17.1	9.0
4	3.16	1.62	1.10	1.63	10.2	4.4	3.7	4.5
5	3.24	3.23	4.86	3.08	9.5	8.4	15.8	8.2
6	2.59	2.17	1.96	1.40	6.9	5.2	5.5	3.4
7	4.37	1.50	3.19	1.73	10.9	3.4	8.5	4.1
8	4.89	2.49	4.29	1.84	11.0	5.5	10.5	4.2
9	5.20	2.39	4.41	2.69	10.6	5.0	9.8	5.9
10	5.15	2.27	4.74	1.34	9.3	4.5	9.6	2.8
11	3.95	1.70	7.55	3.71	6.6	3.2	14.0	7.5
12	8.58	2.25	6.69	1.87	13.5	4.1	10.8	3.5
13	5.37	1.20	9.14	2.00	7.4	2.1	13.4	3.6
14	3.71	2.97	9.40	1.95	4.8	5.1	12.1	3.4
15	8.13	1.43	4.75	-0.30	8.9	2.4	5.5	0.5
16	10.08	0.24	0.03	1.03	10.2	0.4	0.0	1.8
17	-2.03	1.15	-0.26	-1.82	-1.9	1.8	-0.3	-3.0
18	5.84	0.15			5.4	0.2		
19	0.29	0.75			0.3	1.2		

The values are quite irregular, but suggest that growth in weight is slight after the seventeenth year in males and after the sixteenth year in females, with a similar phenomenon in stature beginning a year earlier in both cases. I cannot agree with the authors that the ages 6 to 15 are "critical periods" for stature of males at which the rate of growth changes. The linear equations for the growth curves, and the maxima and minima for each age class calculated from these, which the authors add, do not give any insight into the phenomena.

LESLIE SPIER

The Primitive Culture of India. Colonel T. C. HODSON. James Furlong Fund, vol. 1, pp. 1-133. London: The Royal Asiatic Society, 1922.

This book contains a series of five lectures delivered by Colonel T. C. Hodson at the School of Oriental Studies, University of London, in the year 1922. So small a book, dealing as it does with the cultural expression of millions of people spread over a territory of considerable extent and environmental variation, is bound to be a generalization. Almost every phase of material and immaterial culture is touched upon. Agricultural methods, metallurgy, pottery-making, wood and stone-working, fire-making, dress, dwellings, linguistics, myths, taboos, education, kinship systems, marriage regulations, ceremonies, cosmogonic beliefs, the life-cycle,—all these and their related topics are mentioned. In describing these features the author refers to the practices of various tribal groups in Upper Burma, Northern and Southern India, in Ceylon and in the Andaman Islands.

At no time are we told just what tribes have a specific custom for the author is not interested in cultural distributions or relationships. Though he admits that there are gradations within the "lower culture" he makes no differentiation in cultural status between those tribes that practice terrace farming or jhumming and those that have no planting at all but live on products of the jungle, by hunting and fishing. Similarly as regards other elements of material culture,—the people that use metals, those that have only stone or wooden implements, those wearing no clothing and those dressing elaborately, those erecting leaf shelters and those constructing plank houses, rambling forest dwellers and gregarious citizens,—all fall in the stratum of civilization termed primitive.

What, then, is its distinguishing feature? According to Colonel Hodson primitiveness is a matter of mentality not of culture. The latter, while preserving some of its ancient characteristics, suffers from contact with modern civilization and loses thereby the pristine quality which he believes adheres to the former. His evidence for this is the fact that in spite of native cultural achievements and the immediate presence of European civilization the peoples here dealt with still subscribe to the following practices,—assiduously adhering to tradition, permitting psychic experiences such as dreams and hallucinations to influence actual conduct, rationalizing custom, using concrete rather than abstract terms, crediting fantastic origin myths and believing in specific reincarnation. These are Colonel Hodson's criteria of primitive mentality.

The references from topic to literature are profuse which make the little book of value as an indicator of available sources on Indian and Burmese ethnology.

A. H. GAYTON

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DISCUSSION AND CORRESPONDENCE

MARQUESAN CULTURE

In a recent number of the *American Anthropologist* there appeared a review of my publication on Marquesan material culture in which I am severely criticized both for my conclusions in regard to racial movements in Polynesia, and for the methods by which they were reached. The reviewer lays great stress on the scantiness of the data available for comparative study, claims that I have ignored diffusion as an explanation of cultural similarities, and makes a general attack on my theory of Polynesian migrations, questioning the existence of distinct racial or cultural types within the region and accusing me of treating race and culture as a necessary unit.

I agree with the reviewer as to the scantiness of the data available for the Cook, Austral and Tuamotu groups and, to a lesser degree, for Tonga. Hawaii, New Zealand, Easter Island, the Marquesas and Samoa, on the other hand, are fairly well known and we have a number of good early accounts of the Society group. Although the data on these localities are incomplete, they seem sufficient to justify certain broad general conclusions as to cultural and racial relationships.

The claim that I have ignored diffusion as an element in the development of Polynesian cultures and as an explanation of similarities may be disproved by a few quotations from my publication:

Western Polynesia was exposed to influences from both Micronesia and Melanesia. There is known to have been considerable contact between Samoa and the Gilbert Islands; and both Samoa and Tonga have been strongly influenced by Fiji. (p. 448)

The Samoan and Tongan cultures . . . may be considered as developments of a single comparatively simple culture which has been modified by borrowing from several sources. (p. 461.)

On p. 458 I list a number of traits of Samoan and Tongan culture which I believe to be of Fijian origin. Although diffusion has no doubt been of great importance in shaping the cultures of the relatively close-lying islands of western and central Polynesia, its influence must have been reduced to a minimum in the marginal groups.

Such localities as Hawaii, New Zealand, and especially Easter Island, were separated from their nearest neighbors by a thousand or more miles of open sea and there are no indications that they had any regular intercourse with the rest of Polynesia. The number of purely local features occurring in their cultures would, in itself, indicate a long period of practically independent development. They were no doubt reached by occasional voyagers and castaways, and in both Hawaii and New Zealand we have legends of immigrations subsequent to the first settlement, but their contacts with the outside world must have been few and far between.

The reviewer apparently assumes that the Polynesians are basically homogeneous in race and culture and says (p. 548):

A fair consideration of cultural diffusion would tend to remove any necessity for the long series of migrations of distinct racial units bearing respectively distinct cultural traits. . . . If here be any strong evidence of such waves of racial immigration into Polynesia, well and good.

Recent studies of Polynesian physical type, summarized on p. 447 of my publication, seem to prove conclusively that at least three races are present in the region. Sullivan believes that the two non-Negroid stocks were relatively pure at the time of their arrival and says:¹

From the frequency and distribution of these two quite distinct physical types it is clear that they must have entered Polynesia at different times and possibly by different routes. Most probably they had different languages and cultures.

The Negroid element is stronger in Easter Island than in any other Polynesian locality,² and it seems improbable that any race which reached Polynesia only as an inclusion in some other stock should have been carried to this remote outpost in sufficient strength to become dominant there. The absence in Tonga of traditional or archaeological evidence of an early Negroid population is at least counterbalanced by the Tahitian legends of contact with dark-skinned aborigines and by the finding there of stone implements of Melanesian type which differ considerably from any of those known to have been used by the historic inhabitants. I believe that, until we have much clearer

¹ Sullivan, Louis R., *New Light on the Races of Polynesia*, Asia, January, 1923 p. 19.

² Routledge, K., *The Mystery of Easter Island*, London, 1920, 295f.

evidence to the contrary, we are justified in assuming that each of the three races present in Polynesia entered the region at a different time. As any people capable of colonizing the region must have been relatively advanced in culture, it seems probable that each of these immigrant races brought with it certain distinctive cultural features.

The evidence for the existence of distinct types of culture within Polynesia has been presented in tabular form on pp. 449-457 of my publication and can not be repeated here. There are a number of cultural traits such as the fire plow, earth oven, digging-stick, bark cloth, etc., which are common to practically the whole of Polynesia. Many of these are also present in Micronesia, Melanesia, and even southeastern Asia. There are also a great number of traits which are limited to single islands or groups. Between these two extremes, however, there are certain groups of linked traits which show a definitely limited geographic distribution. These appear to me to be numerous enough to justify a division of Polynesian cultures into types comparable in a general way to the culture areas of continental regions. I do not claim that the cultures which I place in each type are uniform in all respects or that the various types differ in all particulars.

The almost complete isolation of the marginal groups favored the survival in each of them of the physical type and culture of its original settlers, except in so far as these were modified by independent development or later migrations. Gradual interchanges of blood and culture, such as that which went on between Tonga and Fiji, were not altogether precluded, but contacts were so infrequent that many centuries would have been required to bring about important changes in either by this means alone. The distribution of the various racial types in Polynesia as worked out by Dixon³ shows a remarkably close agreement with that of certain cultural traits as worked out by myself, although the two investigations were carried on quite independently. In view of the peculiar geographic conditions it seems easier to explain this phenomenon by a theory of culture bearing migrations than by any other. The reviewer's statement that

every important Polynesian cultural trait is definitely linked with a peculiar racial element which is credited with personally introducing that trait into every province where it is found, (p. 544)

³ Dixon, Roland B., *The Racial History of Man*, New York, 1923.

goes far beyond my real claims. I have not attempted to ascribe any of the features of universal or purely local occurrence to the original culture of any of the racial groups present in Polynesia. I have also admitted the importance of diffusion in the western islands and have given, on p. 463, a number of traits which I believe to have originated in southeastern Polynesia and which I do not consider to be directly traceable to the original cultures of any of the races who settled in that region.

The reviewer especially criticizes my conclusion that cultures of the same general type as the Maori and Marquesan ones formerly existed in southeastern Polynesia. The resemblances of the Maori and Marquesan cultures are so numerous that I feel they cannot be accounted for by any theory of convergence. Many of their common traits are found nowhere else in Polynesia and there are also close similarities in terminology. For instance, the semi-sacred storehouse on posts, which seems to have been limited to these two localities, is called *pataka* in New Zealand and *fata'a* in the Marquesas. Direct contacts numerous enough to account for these resemblances were impossible because of the distance. Most of the historic Maori trace their descent from immigrants who traditionally came from Tahiti and the Cook group, and the Marquesans also were unquestionably in much closer touch with these localities than with New Zealand. Nevertheless, many of the traits in which the Maori and Marquesan cultures show the closest agreement are lacking, or at least very poorly developed, in the historic southeastern Polynesian cultures. We are forced to conclude either that such traits reached both the Marquesas and New Zealand from some unknown point, but failed to reach southeastern Polynesia, or that the Maori and Marquesan cultures represent marginal survivals of a type of culture which formerly existed in the intervening groups as well. The latter seems much more probable.

I am also criticized for my conclusion that the historic form of Hawaiian political organization was introduced into the group by immigrants from southeastern Polynesia. The Hawaiians have many traditions of a late migration from this region and ascribe to the newcomers not only the historic form of government but the introduction of human sacrifice, the enclosed temple (*heiau*) and the large vertical drum used in religious ceremonies. The political features resemble those of the Society group much more than they do those of either Samoa or Tonga, while the other features are all well

developed in southeastern Polynesia but are, with the possible exception of human sacrifice, lacking in western Polynesia. Although traditional evidence must always be received with caution, the stories of late immigrations to both Hawaii and New Zealand are supported by much genealogical and other evidence and cannot be ignored in any theory of Polynesian origins.

R. LINTON

TWO POINTS OF WESTERN DÉNÉ ETHNOGRAPHY

The annual Reports of the Canadian Department of Mines contain what might be termed an Anthropological corner under the able direction of Dr. E. Sapir, of Ottawa. What struck me as a most probable ethnographical inaccuracy was to be found in that for 1923, in connection with Harlan I. Smith's field work and its results; but I did not then deem it of sufficient importance to warrant my sending any words of rectification on the matter to the *American Anthropologist*.

The last Report, that for 1924 just to hand, by a new and undoubted inaccuracy of the same nature, aggravates the first enough to render seasonable, if not necessary, a few lines on what I feel to be deficiencies in both documents. My silence to-day, after what I wrote thirty-five years ago¹ would be tantamount to formal disregard of the rights of ethnological lore.

First as to what is most likely an error in the former. Harlan I. Smith is represented, on the occasion of his work in the Bella Coola area of British Columbia, as finding there "Carrier specimens," and taking "60 Carrier photographs from Bella Coola, B. C." (pp. 28, 30). Elsewhere, the Bella Coola and Carrier Indians are coupled together in such a way as to leave the impression that they live, or lived, in close proximity to one another. So much so, indeed, that a pictograph which is extant on a certain rock cliff in the land of the former is claimed by the explorer to be due to the latter (p. 32).

May I be allowed to put on record my belief that the Déné tribe here pointed out is not that of the Carrier, but that of the Chilcotin (*Tsitkoh-tinne*)?

The oldest known seat of the latter tribe, whence a large part of its members migrated less than a century ago to the bunch-grass

¹ *Notes on the Western Dénés, ap. Trans. of the Can. Institute, etc.*

covered valley and plateaus of the Chilcotin River, was Nakûnt'îûn, an important village to the northeast of the headwaters of the Bella Coola R., and not far therefrom. Before moving to the southeast, the Chilcotin of Nakûnt'îûn had very frequent intercourse with the Bella Coola Indians, whose valley they had only to descend in order to find themselves on salt water, and procure those items of civilized life imparted by the traders established there.

In fact, I feel I am warranted in saying that this commerce resulted in intermarriages which notably modified the dispositions of the Southern Déné now called Chilcotin, adding as they did to their psychological characteristics a boldness foreign to the genuine Déné, a modification which was repeated further north when the Babine of Rocher Déboulé, on the Bulkley R., came in contact with the Tsimshian tribe on the Skeena called the Kitksans or Gitksans.

I can personally vouch for the fact that this commingling of the Chilcotin with the natives of the Bella Coola region was kept up long after the emigration of the Nakûnt'îûn people towards the Fraser R. More or less wild young men—and they were not wanting in that tribe—would, especially after disreputable deeds, or in the case of difficulties with their folk—make it a point to repair thither, and sometimes live for years among the Bella Coola Indians.

The same can be said of no Carrier bands, the southernmost of which lived to the north and never saw Bella Coola Inlet.

As to the Chilcotin, on the contrary, their past history is often taken up with the recital of affrays with Coast Indians and, later on, with intruding whites hailing from the same quarters. Witness, for example, the 1864 massacre, when seventeen white men and the squaw of another fell at their hands in the valley of the Humalkoh.²

With respect to the habitat of the Bella Coola, it is not that the Carrier are too far away therefrom to have been physically unable to leave there something like those specimens of their culture mentioned by Harlan I. Smith. Yet their own territory, their hunting-grounds and fishing-spots, do not reach much to the south of Dean or Salmon R., and the whole topography of the country, a perfect sea of mountains and deep valleys lying, as a rule, to the westward (which I explored in 1884), precludes the idea of any body of Carrier being able to visit Bella Coola by land.

² For a full account of this massacre and the causes that led to it, V. my *Primitive Tribes and Pioneer Traders*, p. 314 of third edition.

Nay, even the very name of the Atnarko River, in whose valley the would-be Carrier pictograph is said to be seen, tells its own tale. It is a Chilcotin, not a Carrier, word, evidently standing for Atna-koh, the river of the Foreigners. It would be Ætna-koh in Carrier and 'Qætnè-kwah in Babine.

So much for Smith's pretended Carrier Indians, who are evidently nothing but unadulterated Chilcotin.

Now I hope that no one will be tempted to argue that the two tribes are so much alike that they can be taken one for the other. They differ widely in physique and dispositions, and their social organization is so unlike that the one follows matriarchate, while the other is governed by father-right. As to their respective languages, one may get a fair idea of their diversity by this little reminiscence. When stationed among the Chilcotin in 1882-85, I learned enough of their dialect to freely converse with them and catechize them without an interpreter. But when, in August of the latter year, I came in contact with the Carrier of Stuart Lake, I could not understand a word of what they were telling me.

In the Department of Mines Report for 1924, mention is made of "the Carrier Indians of Bulkley River in British Columbia" (p. 36); Mr. C. Marius Barbeau is shown continuing his investigations "among the Carriers of Hagwelgate" (p. 37), and Diamond Jenness appears as leaving for Hazelton, on the Skeena, "to carry out researches among the Western branch of the Carrier Indians resident in that vicinity" (*ibid.*), while, among the accessions to the Geological Museum of Ottawa, are shown "Carrier specimens from Hagwelgate" (p. 38) and Carrier photographs from Hazelton and Hagwelgate (*ibid.*).

But all those so-called Carrier are genuine Babines, members of a tribe, or sub-tribe, which, since the time of the first visit it received from D. W. Harmon, has always been considered a distinct ethnographical division. To understand this properly, one must appeal to the records of history no less than to sociology and philology.

In the first place, one should not forget that these appellations, Carrier and Babine, are due to the first traders who saw the aborigines thereby designated, and that these traders came from the east, not from the west or south.³ Therefore, before they for the first time met the Carrier, Alexander Mackenzie and his French Canadian voyageurs

³ Cf. *Primitive Tribes*, etc., p. 34 *et seq.*

had been told of them by the Rocky Mountain Sékanai among whom they first passed.

Now these Sékanai called their immediate Western neighbours *Arełne*, Carrier, from the custom of their widows to daily "carry" on their back the bones of their late husband whose remains had been cremated. These comprised the native inhabitants of Lakes Stuart, Tremblay, Tatla, Fraser and St. Mary's (Tsist'łatha), as well as the streams which connect them, and of the Upper Fraser and tributaries, as far south as the point which was to become Fort Alexander.

So far there was no question of the Babine, who were not discovered or named by the whites until some time after the establishment of Fort St. James in 1806.

Then the French Canadians in the employ of the North-West Company, who first saw them, were struck by the prominence of the lower lip of the women living on the banks of *Nato-pæn* (Babine Lake), a prominence which was due to the labret they wore, and for that reason called them Babine, or the Lippy ones.

That custom, which was absolutely unknown of the Carrier, they owed to the Western branch of their tribe—the "Carriers" of Dr. Sapir's Report—who hunted through the valley of the Bulkley R. and of parts of French and Cambie Lakes. These had in turn borrowed it from their immediate neighbours of Tsimshian parentage, the Kittsons of what is to-day called Hazelton.

Thus it will be seen that those pretended Carrier of the Bulkley are even more Babine than those whose habitat is the basin of the lake which now bears their name. Nay, they were for the Western Dénés the prototype of the Babine, and it would be the climax of inconsistency for an ethnographer to regard them as Carrier.

Of course, neither the lake or river Babine ever called themselves so. It is a well-known fact that in the same way as abstraction, though existing, is rare in the languages of the American Indians, even so they often lack the power of generalizing. They will have names for small ethnical groups, as a rule based on topography, but none for a tribe comprising several of these groups.

Thus it is that as I wrote in 1892,⁴ the Carrier know the lake Babine as *Nato'tenne*, people of Nato (who call themselves *Nitu'tinni*), and as *Hwotso'tenne*, people down by the current (*Hwotsu'tinni* in the

⁴ *Notes on the W. Dénés*, p. 27

dialect of the latter) the Babine of Bulkley River—the 1924 Report's would-be Carrier—who form together one and the same ethnological division.

The latter half of the tribe, on the other hand, passed as *Akwilget*, or “well-dressed,” among their Kitkson neighbours, and had never been called Carrier before the issue of last year's Canadian Report.

The particularity which was responsible for the name of Babine as applied to the inhabitants of Babine L. was to be found in an even more pronounced, or, at any rate, in an anterior, form among their congeners of the Bulkley valley, who had, indeed, taught it to the former.

As to the physical and psychological characteristics, as well as the language, of the two sections of the Babine tribe, they are identical, and I repeat that the lake aborigines became Babine only after their cousins of the Bulkley had given them the example of wearing the labret, which they owed to their heterogeneous neighbours on the Skeena.

A. G. MORICE, O. M. I.

TAOS KINSHIP TERMINOLOGY

The following list of kinship terms were secured at the pueblo of Taos during the summer of 1924. The symbols used in transcription are: a, as in hat; ɑ, English broad a; i, unrounded u; ɛ, open e; hl, surd l; th, strongly aspirated t.

Person, people: dai

Man: sian (also “husband”)

Old man: hlhli

Young man: hle, hlahle

Boy: iwiyu

Child, young, little, also son; also “old” as in “little old man”: uu

Baby: fil

Woman: hliu

Wife: hlitu

Old woman: hliuu

Young girl: kwil

Father: tam (vocative titta)

Mother: ka (vocative hlau)

- Grandfather (on both sides): *ta hluhli* (See "old man")
 Grandmother (paternal): *ahlū*
 Grandmother (maternal): *hlitu* (see "woman," "wife," and "old woman")
 Uncle (paternal): *thuhluu*
 Uncle (maternal): *mimi*
 Aunt (on both sides): *iyamē*
 Elder brother: *papā*
 Younger brother: *bāiuu*
 Elder sister: *tutu*
 Younger sister: *bāyuu*
 Son: *uu* (same as child)
 Daughter: *fiu*
 Nephew or niece (on either side): *kihlu*
 Grandchild: (of either sex): *maku*
 Father-in-law: *maku* (same as grandchild; sometimes *makutam* to avoid confusion)
 Mother-in-law: *maku* (same as grandchild; sometimes *makuhliuu* to avoid confusion)
 Brother-in-law: *ta* (same as grandfather)
 Sister-in-law: *siai* (compare *sian*, man, husband)

JAIME DE ANGULO

NOTES ON THE SHELL-HEAP AT WHITMANVILLE, CAPE COD,
 MASSACHUSETTS

The shell-heap with which these notes are concerned is one which has already been remarked by Chase in the Smithsonian Report of 1883. On his map it is the most southerly one at North Truro. It is situated somewhat north of Corn Hill, to the left of the railroad on the slope of a hill through which a cut was made. It lies opposite a rather deep depression, in which is a small fresh-water pond.

The examination of the shell-heap by Chase was cursory. In his report he only mentions its presence and the finding of two arrow- and spear-heads in the cut just north of the midden.

Mr. William S. Hart, one of the gang that made the cut, who still lives at Whitmanville, informed me that the hill was a cemetery for the Indians, since when the cut was being made portions of human skeletons and numerous stone implements were uncovered. It is evident that there was at one time a considerable Indian encampment

located in the area described. It is the shell-heap, however, which attracted my attention.

The midden shows stratification. There are three distinct layers of shell *débris*. The bottom layer rests upon the native sandy soil. Between the bottom and the middle, and the middle and the top layers are strata of the so-called "black dirt" which in reality is ash and charred residues from fires. The thickness of the shell layers varies from the edge of the heap as thin and scattered to a thickness of from eight to ten inches as the center of the pile is approached. Owing to lack of facilities and time at my disposal I did not explore the entire area of the midden and can therefore give no estimate of its extent. In some places the shell-layers are almost a foot thick. The top layer is, at one place, about eighteen inches below the surface of the ground; at another place outcropping is evident.

The stratification of the midden indicates definitely that the spot had been used for the usual purpose on at least three occasions. It is consistent with the idea expressed by Gookin that the Indians of this region were migratory according to season rather than permanent inhabitants.

The shells found in the midden were of the type common to the region. There were many bones of small animals, both mammals and birds.

Many bone implements were found in the *débris*. They were browned with age and soft and crumbly. Some, however, were still remarkably solid and preservable. Fragments of arrow-heads, knives, spear-heads and other implements and weapons were abundant. Well-worked material was scanty. A stone pestle, a stone borer, several chisels and knives came to light. A large stone, which may well have been the head of a club, was found. It could hardly have been a hammer because its consistent smoothness was unmarred. There was also found a small slender stone of slate, on which could be detected fine scratches in a well-worn groove. This stone probably served as a sharpening instrument. The Indians of this region apparently used whatever stone material was handy for the fashioning of their necessary tools. The natural limitations of the local mineralogy made this imperative. Although cherts and flint are not native to the region, fragments of incomplected tools and much unformed matrix was found.

An interesting find was a number of sherds of pottery. These were apparently fragments of a vessel which had been broken and thrown

on the fire. The pottery was made of clay and pounded shells. It was decorated with a crude design, which had been applied by a small triangular pointed instrument.

Insofar as these remains tell a story, they indicate that the cultural level of the particular tribe or tribes inhabiting this spot was not high. This is in accord with evidence from other sources.

The specimens which were collected from this shell-heap have been given to the Peabody Museum of Harvard University. My appreciation is due Professor Roland B. Dixon of Harvard for his interest and assistance in the examination and interpretation of the find.

FREDERICK S. HAMMETT

ANTHROPOLOGICAL NOTES

THREE NOTEWORTHY Publications of The Folk-Lore Society are now published by William Glaisher, Ltd., 265 High Holborn, London, W.C.I. These are Basil Hall Chamberlain's "Aino Folk-Tales," 1888; Walter Jekyll's "Jamaican Song and Story"; and Ann Callaway's "Religious System of the Amazulu," 1870.

THE RUSSIAN INFORMATION BUREAU announces that institutions, organizations or individuals who are interested in exchanging their scientific publications or periodicals for similar works produced by the scientists of the Soviet Union may make arrangements to do so by applying to its headquarters at 2819 Connecticut Avenue N. W., Washington, D. C. This Bureau represents the Joint Information Bureau of Moscow which because of its continuous communications with scientific and cultural institutions of the Union of Soviet Republics is able to arrange for the exchange of their publications for those of other countries and to establish permanent contacts mutually beneficial to those concerned.

KNUD RASMUSSEN, the Danish explorer, has been awarded the Charles P. Daly Gold Medal of the American Geographical Society for 1924, for his explorations in Greenland and northern North America.

THE FIELD MUSEUM OF NATURAL HISTORY announces the following anthropological and archaeological expeditions for the year 1925:

The museum has commissioned Dr. A. L. Kroeber to collect archeological material in Peru and Bolivia. Dr. Kroeber's initial researches will most likely be at Tiahuanaco, on Lake Titicaca, high in the mountains between Peru and Bolivia. Although the Spaniards found the Incas ruling this territory, it has since been agreed that their dynasty was a comparatively young one, probably originating in the fourteenth century. Incomplete investigations made by various institutions have disclosed much that is mythical regarding the pre-Incas races. Sufficient material evidence has been discovered, however, to prove that civilizations existed as long ago as 1,400 years before the Incas.

The archeological expedition in Mesopotamia, conducted jointly by the Field Museum and Oxford University, under the leadership of Professor Stephen Langdon, during the past two years, will continue its operations through the present year. Important discoveries are expected to come from where excavations have gained great headway. The oldest pictorial writings have been unearthed from a palace believed to have been that of the first kings of Babylon. The excavators are now working into some of the more important burial places, temples and fortresses that are expected to yield material of vast importance in reconstructing the story of pre-Semitic and pre-historic Sumerian races.

Madagascar has been selected as the field for an ethnological survey, under the leadership of Dr. Ralph Linton. This is a most promising region for ethnological research. The inhabitants are of cosmopolitan lineage and many of the tribes are closely allied with the Malayan groups farther to the east. The island contains twenty-six different groups of people, which are sub-divided into a greater number of tribes. The southern tribes are almost unknown. They are believed to be descendants of people who ruled the island before the Hovas, the present so-called ruling class. The Hovas apparently came originally from Sumatra. Some of the other tribes are of the Mongolian type. Still others claim to be descendants of the Arabs. The expedition will attempt to make contributions to the early history of the migrations of the Malayan group.

An expedition to southern California, under the leadership of Charles L. Owen, will be financed by the Julius and Augusta N. Rosenwald Fund. Complete data concerning the Hupa, Yurok, Cahuilla and Chemehuevi Indian tribes of that region will be sought.

—*Science*.

DR. ALBERT ERNEST JENKS, professor of anthropology, on sabbatic leave from the University of Minnesota, sailed on January 28 to spend the remainder of the year in study and research in Europe. The first half of the year was spent in Washington. Dr. Jenks returns the last of June to join the faculty of the University of California for its Southern Branch summer session in Los Angeles.

—*Science*.

DR. GEORGE GRANT MACCURDY, of Yale University, was re-elected director of the American School of Prehistoric Research in Europe at the annual meeting of the managing committee of the school held in Washington, D. C., on January 3.

THE DEGREE of Professor of Anthropology has been conferred upon Mr. A. Matsumura, of the Imperial University. This is the first title of such a kind ever presented by the Japanese Government.

THE EXECUTIVE COMMITTEE of the American Anthropological Association recently passed the following resolution:

WHEREAS: The visit of the Secretary of the Interior to the Navajo Reservation, as reported in "Progress in the Handling of Indian Affairs," reveals the distressing fact that out of 8653 Indians examined, 1981, or nearly 23%, were suffering from trachoma, a highly infectious disease frequently leading to blindness, especially in reinfection cases; and

WHEREAS: The health situation in communities of the American Indians throughout the United States is generally unwholesome as a result of the diseases introduced among the aboriginal population by white men, and now constitutes a menace to public health not correctable by ordinary medical and sanitary agencies; therefore be it

Resolved: That the American Anthropological Association approves the efforts of the Secretary of the Interior to apply prompt remedial measures, and further expresses the earnest hope that the campaign be extended, that the cooperative health and welfare organizations of the country be asked to assist in every useful way, and that a special appeal for financial aid be made to foundations and other private sources if the available public funds prove inadequate to meet this crisis; and be it further

Resolved: That copies of this resolution be sent to the Secretary of the Interior, to the National Academy of Sciences, the National Health Council, and such other organizations as may be interested.

AT THE JOINT MEETING of the American Ethnological Society and the Section of Anthropology and Psychology of the New York Academy of Sciences held on March 23, 1925, an informal discussion was held on the topic, "Influence of Early Environment on Personality." The discussion was led by Professor William Ogburn.

THE EXECUTIVE COMMITTEE of the American Anthropological Association has voted to accept an invitation from the Social Service Research Council to become associated with it. This Council consists of three delegates each from the American Economic Association, The American Sociological Society, and the American Political Science Association.

THE UNIVERSITY OF HAMBURG has conferred the degree of Ph.D. *honoris causa* on Professor Robert Lehmann-Nitsche, Chief of the Anthropological Department of the La Plata Museum and professor of anthropology in the Universities of La Plata and Buenos Aires.

M. L'ABBÉ ROUSSELOT died in Paris on December 16, 1924.

MR. N. C. NELSON of the American Museum of Natural History has recently left for Asia where he is to be archaeologist of the expedition under the leadership of Mr. Roy Chapman Andrews which the American Museum is conducting in Central Asia.

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THE HOKAN AFFINITY OF SUBTIABA IN NICARAGUA

(Conclusion)

By EDWARD SAPIR

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III. NOTES ON SUBTIABA AND HOKAN MORPHOLOGY

A. *General Remarks*

When one passes from a language to another that is only remotely related to it, say from English to Irish or from Haida to Hupa or from Yana to Salinan, one is overwhelmed at first by the great and obvious differences of grammatical structure. As one probes more deeply, however, significant resemblances are discovered which weigh far more in a genetic sense than the discrepancies that lie on the surface and that so often prove to be merely secondary dialectic developments which yield no very remote historical perspective. In the upshot it may appear, and

frequently does appear, that the most important grammatical features of a given language and perhaps the bulk of what is conventionally called its grammar are of little value for the remoter comparison, which may rest largely on submerged features that are of only minor interest to a descriptive analysis. Those who find this a paradox think descriptively rather than historically. It would be an instructive experience in method to compare English grammar with that of the Indo-European language reconstructed by philologists. Whole departments of Indo-European grammar find no analogue in English, while a very large part of what English grammar there is is of such secondary growth as to have no relevance for Indo-European problems. To anticipate from another field, a curiously large proportion of those features that make up "Haida grammar" turn out on closer study to be dialectic developments, on a common Nadene basis, that are peculiar to it as distinct from Tlingit-Athabaskan; it appears, moreover, that some of the most significant evidence serving to link Haida with Tlingit-Athabaskan is not so much as mentioned in the formal remarks on Haida grammar that have been published. It would not seem necessary to make these self-evident remarks if so much of our work in American linguistics were not heavily biased in favor of a purely descriptive method and against all attempts at reconstructing the historical perspective.

We need not be surprised to find that some of the more superficial facts about Subtiaba morphology, enumerated in Lehmann's study, find no direct parallels in the northern Hokan languages. Subtiaba, for instance, has a "preterit tense" formed by prefixed *ni-* or *ci-*, a "present tense" in *na-*, a "future" in *ga-*; while Pomo has a past in suffixed *-hi* or *-hi-ba*, a present in *-a*, and a future in *-eγa*; and Yana a preterit in suffixed *-ha* or *-ni-*, a present in *-si*, and a future in *-si-*. As soon as we realize, however, that the Subtiaba "tense prefixes" are merely proclitic elements, probably of demonstrative or adverbial origin (see nos. 118, 119, 107b, 106), they cease to be of major morphological interest for the comparative point of view. As a matter of fact, some of the most important grammatical elements and features of Subtiaba have not been isolated by Lehmann and it is precisely these that

prove it to possess a fundamentally Hokan grammar. I shall call attention to them in this section.

There is one point of grammar, however, that seems definitely un-Hokan. This is the order of elements in compound nouns. In Subtiaba the determining noun regularly follows instead of preceding, e. g. *si'nu d-a'gu* "stone-fire, flint," *d-a'u d-ia-lu* "mouth-water, shore," *gi'tcu n'a'u* "backhand, back of the hand," *yi'tu* (<*ya-i'tu*) "water-eye, tear." This is remarkable because the Hokan languages as a whole compound in the reverse order, e. g. Chim.¹⁰ *asi-n-ala* "day-sun," Kar. *cak-ac* "arrowhead-stone, flint," Sh. *luxu-ara* "back-bone," Ach. *apxa-tsu* "night-sun, moon," Yan. *'au-ha* "fire-water, whiskey," Po. *yu-xa* "eye-water, tear," Was. *ηauaη-aηal* "baby-house, umbilical cord," Es. *tomanis-aci* "night-sun, moon," Sal. *u-ca-t* "eye-water, tears," Moh. *hukθar-iθo* "coyote-tooth." It is true that there is a certain type of Yana compound in which the determining element follows, e. g. *i'dal'-ba* "bone-deer, deer bone," *galu-m-'i* "arm-tree, branch"; these consist of nouns in which the second member of the compound refers to the possessor of the body-part indicated by the first. It is possible that this type was at one time prevalent in Hokan and that it was generalized in Subtiaba, but it seems very much more likely that the Subtiaba order is due to the influence of certain other Mexican and Central American linguistic groups in which the determining element in compound nouns regularly follows (e. g., Maya *tzotz-ceh* "skin-deer, deerskin"; Zapotec *yulnu-kuihi* "tree-fruit, fruit tree," Chiapanec *çiquila ñhi-popatì* "book generation, book of descendants," Mazatec *noon-tzoco* "finger-foot, toe"). We have already hinted at a phonetic influence on Subtiaba of Mixtec-Zapotec-Otomi.

B. Form of Stem

I have called attention at various times to the large number of stems in the Hokan-Coahuiltecan languages which begin with a vowel and to the tendency of this vowel to drop out either in other forms of the same word or in cognate words in other languages of the group (e. g. Po. *uyu* "eye": *yu-xa* "eye-water, tear").¹⁰

¹⁰ For abbreviations see p. 404, fn. 4; p. 405, fn. 5. *Yan.*, pp. 28-32; *Hok.-Coa.*, pp. 289, 90; *Sup.*, pp. 71, 72.

The loss of the vowel is likely to be due only in part to a phonetic reason, in part also to an alternation that has morphological significance. There seems to be a pronounced tendency to drop the vowel when the word in which it occurs enters into compounds.

In Subtiaba, precisely as in Shasta-Achomawi, Chimariko, Pomo, Washo, Salinan, and Yuman, there is an exceedingly large percentage of stems that begin with a vowel. Some of these have already been listed in the table of Subtiaba cognates. Others, taken at random, are: *i'ya* "water,"¹¹ *d-undi-lu'* "rain," *i'di'* "ash," *a'no* "father," *oco* "breath," *exti'u* "forehead," *i'du'* "salt," *u'c'ndu'* "ulcer," *ε'lu'n'u* "sloth," *εηdi'* "tigre pintado," *a'ga* "pig," *etci* "beak," *a'pu'* "snake," *eki* "fish," *a'xkwa* "ant," *εxti'* "wax," *a'xmo* "root," *i'xna* "bird-cage," *i'du'* "reed," *eni* "doctor," *-i'du'* "to bury," *-u'sin'a* "to chew," *u'ma* "cold." Many stems that really begin with a vowel are disguised by the presence of a nominal, verbal, or adjectival consonantal prefix (see below). In other cases the vowel is lost as such but its former existence can be demonstrated by comparative evidence and by its influence on the following consonant or on the vowel of the next syllable, e. g. *n'ay* "ear" < **ismalk* (no. 7), *se-ka* "sister" < **isa'-* (no. 56). All in all, the persistence of stems with initial vowel is so marked that one is led to surmise that there lies buried in the Hokan-Coahuiltecan languages an old system of significant initial vowels, whose nature remains to be determined. S. Pomo *i'pa* (read probably *p'a*) "intestines": *apa* (read *ap'a*) "excrement" is suggestive (in other Pomo dialects *p'a* or its reflex *fa* is used for both "intestines" and "excrement"), so far as it goes; cf. perhaps also Sub. *i'su'* "bone": *m-a'su'* "thorn"; *r-a'na* "herb": *i'na* "leaf."

More conclusive than such alternations as Sub. *se-ka* "sister" < **isa'-* (no. 56): Was. *-i'sa* "older sister," Es. *itci* "sister," Ach.

¹¹ I do not believe that much reliance is to be placed in Lehmann's vocalic quantities. Most of these initial vowels are likely to be short even though marked long. Many German (and English) investigators have a tendency to consider all close vowels long, particularly if they occur in an open syllable and bear the stress. Such alternations as *i'lu'* and *ilu'* "seashore," *d-a'gu-lu'* and *d-agu'-lu'* "fire," *d-uku'lu'* and *d-u'xku-lu'* "moon" indicate that Lehmann has not accurately determined the quantities but has merely assimilated them to German speech habits.

-is "older sister," N. Dieg. *esa-n* "younger sister," *etca-n* "older sister" and *si'n^{nu}* "tooth" (no. 20): Ach. *iisa*, Sh. *ε'tsau*, Ats. *iisa^u*, in which an old initial vowel may be inferred for Subtiaba by comparative evidence, are cases of alternation of forms with and without the vowel in Subtiaba itself. I have noted:

- t-asu* "hair": *su[·]hu* "hair of head" (no. 12)
d-aŋwa "mouth": *na-ŋ(g)wa-ya* "to yawn" (no. 16)
a'no, ano "father": *na-rin^{nu}* "father-old, grandfather"
etcu "head": *gi[·]tcu* "on, over" (no. 14)
embi "owl": *na-mbi[·]ya* "to cry" (no. 64)
eme "camisa de mujer": *me-xn^ua* "shirt" (no. 52)
i[·]ya "water": *ya[·]-u, ya-u* "well, estero," *yi[·]tu* < **ya-i[·]tu*
 "water-eye, tear"
 Sq. *isi[·], isi-nu* "stone, flint," Tlap. *istci* "stone": *si[·]-nu[·]*,
 six[·]-nu "stone" (no. 45)
imba "one": *me-nu[·]* "nine" (no. 100)
uku[·], d-uku[·]-lu[·] "moon, month": *imba-ku[·]* "one month"
 (no. 40)
umba "fat, big": *-mba* in compounds (no. 85)
u[·]ma "cold": *ma* "cold," *i[·]ya-ma* "water-cold"
d-u[·]tu[·] "mother": *du[·]ri[·]n^ua* "mother-old, grandmother"
d-u[·]du[·]-lu[·] "female breast": *ca[·]-du[·]-lu[·]* "suckling"

The formal parallelism of Sub. *i[·]ya* "water": *yi[·]tu* "water of eye, tear" and Po. *uyu* "eye": *yu-xa* "eye-water, tear" is striking in spite of the opposed order of the compounded elements.

C. Hokan Noun Prefixes

Prefixed d-. The Subtiaba nominal *d*-prefix is a freely movable element, as is the corresponding element in Washo and Salinan. It is unnecessary to give examples here as the reader can find them for himself in the material already presented. In many cases the noun, if beginning with a vowel, may occur with or without the *d*-prefix; in the former case it is often, or generally, followed by the demonstrative element *-lu[·]* (no. 122) except in the case of body-part nouns, which may have the *d*-prefix but only rarely allow the *-lu[·]* (e. g. in *d-u[·]du[·]-lu[·]* "female breast"). Words beginning with a consonant have no *d*-prefix. Here are a few examples:

- d-i[·]ya-lu[·]* "fluid": *i[·]ya* "water, stream"
d-a[·]gu[·]-lu[·] "fire," *si[·]nu[·] d-a[·]gu[·]* "stone of fire, flint": *a[·]gu[·]*
 "fire" (no. 36)

d-aʃka-lu "sun," Br. *d-aska*: -*yaʃka* "to shine," Sq., Ar. *ahka* "sun," Tlap. *axka* "sun" (no. 46)
d-uʔu "mother," *d-uʔu-lu* "my mother": *du-* "mother" (no. 55)

A peculiarity of the *d*-prefix is its use not only in absolute forms but with possessive suffixes (e. g. *d-uʔu-lu* "my mother," *d-aʔnu-lu* "my father": *aʔno*, Sq. *ana* "father"). This is in accord with Salinan usage (e. g. *t-um-saʔnai* "thy hide," *t-a-saʔnai* "our hide," *t-uk-saʔnai* "your hide"; *t-u* "my face," *t-uʔw-o* "his face"). In Washo the *d*- is found in the absolute form of words beginning with a vowel (e. g. *d-aʔal* "house," *d-iʔyek* "tooth," *d-aʔdu* "hand"), not before consonantal stems. This is as in Subtiaba. In Washo, however, *d*- drops in the forms with possessive pronouns (e. g. *l-aʔal* "my house," *m-iʔyek* "thy tooth," *aʔdu* "his hand"); certain of Lehmann's forms suggest that the *d*- is lost when the possessive is prefixed in Subtiaba as well (e. g. *yu-aʔno* "my father"), but unfortunately Lehmann did not arrive at complete clarity in regard to the use of possessive pronominal affixes. The consonantal nouns of Washo, which have no *d*- in the absolute, prefix it in the possessive forms of the first and third person (e. g. *mʔko* "knee"; *d-i-mʔko* "my knee," *da-mʔko* "his knee").

Apparently *d*- was originally a general nominalizing element and served to differentiate the definitely nominal use of stems from their adjectival or verbal use. This seems to come out clearly in cases like:

d-aʔa-lu "grass": *m-aʔa* "green" (nos. 38, 88)
d-aʔalni "runner": -*g-aʔnu* "to run" (no. 75)
d-ehma-lu "sky," *d-ehma* "above": -*g-iʔma* "to ascend" (nos. 44, 60)

Such alternations are entirely analogous to Washo cases like:

d-ime "water": *ime* "to drink"
d-aʔal "house": *aʔal* "to live"

and to Salinan ones like:

t-aʔs-o "his name": *k-ase-t* "to be called"
t-ecxai "dawn": *k-ecxai* "to dawn"
t-atcex "seat": *k-atcek* "to sit down"
t-alelke-ya "question": *p-alelko* "to ask"

Presumably the same contrast between *d*-noun and verb stem without *d*-prefix or with another prefix applies also to Pomo, but the evidence is more scanty here:

d-ano, d-ono "mountain": S. E. Po. *k-ano* "mountain" (properly "to be a mountain, mountainous"? ; see no. 41)

d-iwe, d-uwe "night" (as noun): *iwe* "night" (properly "to be night"? cf. Yan. *b-a-wi-sa-* "to be night"?)

In Salinan the nominal prefix *t-* is used not only in the absolute and, partly, the possessed forms of many nouns but is also frequently employed to make subordinate clauses (or nominalized forms) out of verbs, in which case it replaces intransitive (or static) *k-* and transitive (or active) *p-*. This usage is regular after subordinating particles, temporal adverbs, negatives, and other proclitics, e. g.:

k-amti "he was hunting": *me t-amt'ele* "time the-hunting (plur.), when they hunt"

ko p-amk-o "not (I-) have-ability-(of) it, I cannot": *ko t-amai* "not (was) the-being able, he could not"

This interesting usage is strikingly paralleled in at least one Subtiaba example:

-g-apu "to sleep," *g-apo* "acostado": *iku na-tcu ma d-apa* "I go with (=in order to) the-sleeping, I'm going to sleep"

Other Nominal Prefixes in Hokan. It is possible that Hokan **t-* (Sub. *d-*) was originally confined to a particular class of nouns and was later generalized in certain dialects. There seem to be clear traces in a number of Hokan languages of other absolutive noun prefixes and the fact that Chontal has several of them (*l-*, *tl-*, *ka-l-*) suggests that Hokan may originally have had a definite set of demonstrative classifiers prefixed to nouns. There is reason to believe that Subtiaba has at least two other such elements, possibly four (*r-* and *s-*, *c-*; possibly also *p-* and *k-*). The examples will be listed with analogous forms from other Hokan languages.

An element *l-* is recognizable in Chontal (e. g. *l-imits* "foot": Tequisisteco¹² *mitci*; *l-icmatsi* "ear": Tequ. *smatsi*; *l-ahuil* "house":

¹² A dialect closely related to Chontal.

Tequ. *hur*; *ka-l-ora* "sun": Tequ. *ora*; *tl-* is perhaps demonstrative *t-* discussed above, + *e-*, cf. compounded *ka-l-*, e. g. *tl-unğa* "fire": Tequ. *unķwa*; *tl-amats* "earth": Tequ. *mats*, *ha-l-maks*; Salinan (e. g. *l-akana* "spider": Ach. *ts-axa*, Sub. *a'xka*, no. 24; *l-otał* "palm": Hoka **itali* "hand, arm," Sal. *etał* "shoulder"; *l-emi*, *l-ime-n* "rabbit-skin blanket": Sub. *eme* "camisa de mujer," no. 52; *l-ema* "sky," *l-e'mo* "over": Sub. *d-ehma* "above," no. 44); and Chumash (e. g. *al-apa* "sky," *al-apa-ya* "above," no. 44; *al-amün*, *ł-mono* "man"; *al-apamai* "body": *amun*; *al-aca*, *al-ica* "sun": *icau*, no. 33; *al-axiwil* "coyote"; *al-imu* "fish"; *tc-l-imí* "stream": *ma*, no. 66). The *l-* prefix is probably related to demonstrative **la* (no. 104) and to suffixed **l(a)* (no. 122.) To it probably corresponds Sub. *r-*, *r-*:

r-a'gu'ba "dirt": *gu'ba* "clay" (no. 30)

r-a'yma "mountain forest"

r-a'bu "man, husband," *r-a'ba-gu* "woman": Hoka **ipa* (no. 54a)

r-o'axi "people"

r-u'wa, *r-u'wa* "dog"

r-a'na "herb, medicinal herb": *d-a'nva* "medicinal herb" (perhaps *r-anna* < **r-atana*: **itana* "leaf," no. 39)

r-u'ma'su "espino muchugüiste": *ma'su* "thorn, spine"

r-andi'yu "Piñuela" (originally "what is for sickness"?): *na-ndi'yu* "to be sick"

r-a'wa "handle of stone axe": *a'xwa* "axe"

r-agami "horizontal beam"

r-etcu "answer"

r-u'ba "guacal," *r-u'binya* "sieve"

r-ingi "dream"

r-i'gu "house-post"

r-i'so'ti "wooden peg to stretch out hides"

r-a'ga, *r-agu* "egg, testicles"

r-u'xku "animal"

A sibilant noun prefix *s-* is clearly found in Salinan as *s-*, *c-*: (e. g. *s-katata* "ground-owl"; *c-kan* "prairie-falcon"; *c-ka'k* "crow" Yan. *ga'gi*, Was. *ka'gi*; *c-koł* "snake, worm"; *c-lot* "gull"; *c-maiyiĕ* "abalone"; *s-kele'le* "sparrow-hawk"; *s-ka'u* "blue crane"; *s-ke'n* "shell fish"; *s-mokoĕ* "mole"; *s-mokat* "bee"; *s-mate'xan* "quail"; *s-li'pəpə* "green-winged teal"; *s-ĕalmoĕ* "rat"; *s-kalo* "whippoorwill"; *s-kaiya* "raccoon"; *s-nam* "wildcat"; *s-me'kor* "rattlesnake"; *s-mohel* "female skunk"; *s-mic* "cat"; *s-nai* "eagle"; *s-na'k*

"kangaroo-rat"; *s-pe-kē* "red-tailed hawk"; *s-p'oko* "burrowing owl"; *s-to* "fox"; *s-tamakala* "bat"; *s-antən* "black ant": Cahuilla *ante-m* "large ants," San Luiseño *anut*;¹³ *c-am-tel* "corpse"; *p-ama-t* "carriage," Hokan **ima-* "to die," no. 65; *s-kan* "stomach"; *s-kaniltai* "rib": *kanello*; *s-koikne* "chin, beard"; *s-mokutu* "animal's windpipe"; *s-nipik* "bones of wing"; *s-panat* "skin, hide"; *s-peket* "eyebrow"; *s-poket* "fur, hair"; *s-puk* "muscle"; *c-tan* "leaf": Hokan **itana*, no. 39; *c-k'alə* "large soaproot"; *c-pokat* "clover"; *s-mat* "brush"; *s-mo* "acorn": Po. *maa*, Yan. *-ma-la*; *s-mokunət* "clover"; *c-la* "coil basket"; *c-l-emi-y'a*, *c-l-e-mi* "coat," no. 52; *s-kape* "tray"; *s-pokaixa*^a "drinking-cup"; *c-k'em* "sea": Chum. *s-ɣami*; *c-kon* "cave"; *s-mak* "asphaltum"; *s-mak'ai* "night": Chim. *himo-k* "evening"; *s-pehet* "soot"; *s-ka'ata* "infant"; *s-tau* "girl"; *s-kunṭa-m* "girl"; *s-kael* "scar, cut": *kala-m* "sore, scar"); more doubtfully in Chumash (e. g. *s-kuntawa* "lightning"; *s-ɣami* "ocean": Sal. *c-k'em* "sea"; *s-tanayik* "valley"; *c-tōniwa* "dog"; *s-lo*, *ts-lo* "eagle"; *s-maps* "sun"; *c-aɣcilt* "fish": *-aɣcilt* "to fish"; *c-i'k* "louse": Sal. *t-ike*, *ike*); and in Yuman (e. g. Dieg. *s-ilyexwau* "nail": Moh. *k-elyuko*). Among the many Salinan examples are a large number of animal names, but it would be rash to conclude that *s-* was originally a classifier for nouns indicating animals. Its employment must have been much wider. A number of Subtiaba examples justify the inference that *s-* is a classifying noun prefix in this language as well:

s-aɣnwa "copper (axe)," *s-aɣnwa-lu* "iron, machete": *a-ɣwa* "axe," *r-aɣwa* "handle of stone axe"
s-ta-dangwa "upper lip" (*d-aɣwa* "mouth")
s-i-tu "eye": *yi-tu* "tear" < **ya-i-tu* (no. 9)
s-osto "breast" (no. 5)
s-i-tin^u "rump"
s-ɛɣn^u "penis"
s-aɣwq "soul"
s-cambo "abdomen"
c-n^uan^u "finger-nail"
c-iŋgoo "wooden churn": *-goo* "to filter, squeeze out"

There are likely to be two distinct *tc-* (*ts-*) prefixes. In Chumash it is probably a dialectic phonetic development of the *s-*

¹³ There has evidently been borrowing between Salinan and Shoshonean. This example clearly shows *s-* as a prefixed element.

already discussed (cf. *s-lo*, *ts-lo* "eagle"). It seems to occur particularly in the San Luis Obispo dialect (e. g. *tc-xime* "night": Santa Cruz *oxemai*; *tc-nexan* "ocean"; *tc-l-imi* "stream": *ma*, no. 66). Note that this Chumash *tc-* may be compounded with *l-* precisely as is *s-*, *c-* in Salinan (e. g. *tc-l-imi* "stream"; Sal. *c-l-emi* "coat": *l-emi* "rabbitskin blanket"). On the other hand, a true *tc-* (*ts-*) prefix, probably of Hokan origin and perhaps related to *s-* as Chontal *tl-* is to *l-*, seems to occur in Yuman (e. g. Dieg. *tc-ipasi* "liver": Moh. *'ipasa*, Sh. *äpci*, Ats. *opsi*); Washo (e. g. *ts-igu'guc* "belly," red.. Chum. *akcu*, *akcewe*; *ts-aṇa* "anus"; *ts-imi-bi* "hip;" *ts-iga-l* "kidney": Sub. *i'ko*, *g-i'ko* "liver, gall," no. 15; *ts-ime-l* "beard": Hokan **ima* "hair, skin," no. 52; *ts-uku-man* "spider": Ach. *ts-axa*, no. 24; *ts-akopi* "mud": Sub. *gu'ba* "clay," *r-a-gu'ba* "dirt," no. 30); possibly Pomo (e. g. *ts-i'me* "hair, fur," no. 52; *ts-awata-k* "frog": *wata-k*, *wata*); and possibly Shasta-Achomawi and Chimariko (e. g. Ach. *ts-axa* "spider": Sub. *a'x-ka*, no. 24; Ats. *ts-up'-dis* "navel": Hokan **unapi-*, no. 17; Ach. *ts-ami-ki*, Chim. *tc-emu* "sky": Es. *imi-ta*, no. 44). The evidence is not abundant but convincing for Yuman and Washo. On the whole the *tc-* prefix seems to be characteristic of body-part nouns.

A nominal *p-* prefix can be pretty clearly made out for Salinan (e. g. M. *p-a kata*, A. *a'kat*¹⁴ "blood": Hokan **aṣwati*, no. 3; M. *p-akenai*, A. *akainai* "animal's womb"; M. *p-aktaina'*, A.

¹⁴ It is not altogether clear whether in cases like this the Antoniaño dialect has actually lost a *p-*, as Mason states, or has merely not used the nominal prefix. An examination of his material suggests that original *p'* and *p* (intermediate) remain in both dialects (e. g. M. *p'xat* "excrement": A. *p'xat'*, no. 8; M. *penan* "milk": A. *pena'no*; M. *pala'kak* "California woodpecker": A. *pela'ka'*; M. *spoket* "fur, hair": A. *spoket*; M. *pasil* "chia": A. *pasil*; M. *pa'jak* "manzanita": A. *pat'ax*; M. *pe't* "pil": A. *pili*; M. *t'mople* "fire-sticks": A. *tapleya*; M. *tipintca* "whiskey": A. *tepenca*. Such examples are far too numerous to allow one to say that original *p* disappears in Antoniaño. It is probably nearer correct to say that *p'* becomes *'* in Antoniaño (e. g. M. *k'a'p* "acorn": A. *ka'*; M. *p'as* "son": A. *as*, read *'as*; M. *icili'p*, read *icilip*, "fingernail": A. *t'-cele*) but that in cases of type M. *p-*: A. zero we are really dealing with parallel forms with and without *p-* prefix. As Mason does not always write *p'*, it seems that cases like M. *s'panat* "hide": A. *sanat* should really be understood as *s'panat*: *s'anat* (contrast M. and A. *spoket* "fur" above). Our interpretation is supported by the fact that the active verbal *p-* prefix does not disappear in Antoniaño and by the further fact that in derivatives of nouns with *p-* this consonant is replaced by other elements (e. g. *k-akat-e* "be bloody," *k-exuko-p* "bony").

akatcanai "thumb"; M. *p-axak*, A. *axa-k* "bone": Hokan **ihyaka*, no. 4; M. *p-a't*, A. *at' < hat'* [?] "white oak"; M. *p-axakil*, A. *askle-t* "live oak"; M. *p-axuwe* "bow": Chum. *t-axa*, *ax*, no. 49); less safely in Chumash (e. g. *p-ako-wac*, *p-akii-was* "old man": Chon. *akwe*, Moh. *kwo-ra*-, Cochimi *aku-so*, Ton. *ku-ca* "old"; *p-awa-yic* "house": Hokan **awa*, no. 50); and in Pomo (e. g. N. Po. *b-isi-l* "rabbit-skin robe": *ici*, *itci*, *ci*, *ci-ts*; N. Po. *b-atziya* "yellowhammer": *k-atziya*, *k-otciyo*, *k-otciya*). A couple of examples seem to be found in Subtiaba:

p-aʔpu "arm": *m-aʔpu* "body"
p-anʔa'u "palm": *nʔa'u* "hand," *d-anʔa'u* "finger"

Finally a Hokan *k*-prefix can also be made out with some assurance, though it nowhere appears as a common element, so far as we can see at present. It is perhaps identical with the intransitive *k*-prefix treated below. It is probably found in Pomo (e. g. *k-ano*, *k-no* "mountain": *d-ano*, *d-ono*, no. 41; *k-alaca* "moon": *alaca*, no. 31; *k-atziya*, *k-otciyo*, *k-otciya* "yellowhammer": *b-atziya*; *k-awina*, *k-awana*, *x-awili-n* "turtle": Sal. *t-awai*, *t-awə* "turtle"; *k-ako* "clam": *l-ako*, *l-axo*, *l-uk*); perhaps also in Salinan (e. g. *k-aʔo* "place": *c-oʔo*; *k-alak* "goose, crane": Yan. *laʔagi* "goose," Chim. *lʔo* "goose," S. W. Po. *lala* "wild goose," Karan. *luak* "goose," Cot. *k-rak*, Ton. *x-ilik*); Chumash (e. g. *k-utet* "woman's breast": Sub. *d-u-du-lu*, no. 6a; *k-cihimu* "star"); and Yuman (e. g. Moh. *k-apeta* "turtle": Ach. *həpits*; Moh. *k-elyuho* "nail": Dieg. *s-ilyexwau*). A few examples of *k*-nouns seem to be found also in Subtiaba:

k-i-a-mi-cu "bladder": *i-a-mi-cu* "urine" (compounded with *i-ya* "water")
g-i-ko, *g-ika* "liver": *i-ko* (no. 15); also *g-i-ga* "heart"?

General Survey of Hokan Nominal Prefixes. As I have already remarked, it is probable that some, and perhaps all, of these prefixes are merely stereotyped demonstrative particles:

t- < demonstrative stem **ta* (no. 105)
l- < demonstrative stem **la* (no. 104)
p- < demonstrative stem **pa* (no. 108)
k- < demonstrative stem **ka* (no. 106)
s- of unknown origin

- tc-* (*ts-*) of unknown origin
ka-l- (Chon.) compounded of demonstrative stems **ka* (no. 106) and **la* (no. 104)
tl- (Chon.) compounded of demonstrative stems **ta* and **la*?
 Perhaps Sal. *ʔ-*, which is phonetically distinct from *t-* and more common, also derives from *tl-* via *tr-*

Further, of no extra-dialectic affiliation:

- Shastan *k(i)-* (e. g. New River *ki-'oi* "eye": Sh. *oi*; New River *k-innux* "head": Sh. *innux* "hair") < demonstrative stem **ki* related to **ka*? Perhaps also Yan. *k'i-* in *k'i-lsau-na* "tooth" (or *k'-ilsau-na*?)

There can be little doubt that certain absolutive nominal suffixes are closely related to the prefixes, both being petrified forms of nominalizing elements that differed in position (proclitics and enclitics). Hence:

- t-* : Es. *-ta* (e. g. *imi-ta* "sky")
l- : *-l*, Sub. *-lu'*, Es. *-la* (e. g. *imi-la* "sea"; *maksa-la* "earth": Chon. *t-l-amats*, Tequisisteco *ha-l-maks*); see no. 122
p- : *-p(a)* (e. g. Kar. *yu-p* "eye": Po. *uyu*, *yu-*; *-i-p* suffix for tree names: Yan. *'i-* "tree, wood"); Es. *-pa* (e. g. *hik-pa* "eye," *matshai-ba* "whites")
s- : Es. *-sa* (e. g. *imu-sa* "hole": Po. *mo*), *-s* (e. g. *loto-s* "arrow," *hoci-s* "nose," *amutata-s* "stars"); Kar. *-c?* (e. g. *ke'mi-c* "evil thing, monster": *ke'm* "bad")

And from demonstrative **na* (no. 107b) and **hi* (cf. Po. *he* "the, this"; Sal. *he* "the, that"; Chum. *he* "this"; Was. *ha* "there near you") are probably derived

- na* absolutive: Yan. *-na*; Es. *-no*, *-nax*, *-nex*, *-nix*; perhaps also Kar. *-n*, *-r* agentive (also, it seems, absolutive *-r*, *-ra*, e. g. *ara-r* "person"; *ve'cu-r* "horn": Chim. *h-owec*, Yan. *we'yu*)

and

- hi* absolutive: Yahí *-hi* (e. g. *ya'-hi* "person": N., C. Yan. *ya'-na*)

It is interesting to observe that the absolutive suffixes occur most where the prefixed elements are either wanting, entirely or practically so (Yana *-na*, *-hi*; Esselen *-l*, *-la*, *-ta*, *-sa*, *-nax*; Chimariko *-l*, *-r*; Karok *-p*, *-c*, *-r* < *n*), or seem to be vestigial rather than living elements (Yuman *-l*; Pomo *-l*). Of these suffixes

HOKAN ABSOLUTIVE NOMINAL AFFIXES

KAR. SII-ICH.	CHIM.	PO.	YAN.	WAS.	ES.	SAL.	CHUM.	YUM.	CHON.	SUB
<i>t-</i>	<i>d-(?)</i>	<i>d-(?)</i>	—	<i>d-</i>	—	<i>t-, t-</i>	<i>t-</i>	—	<i>t-</i>	<i>d-</i>
<i>l-</i>	—	—	—	—	—	<i>l-(?)</i>	<i>a-l-</i>	—	<i>l-</i>	<i>r-, r-</i>
<i>t-l-</i>	—	—	—	—	—	<i>(t-)</i>	—	—	<i>t-l-</i>	—
<i>s-l-</i>	—	—	—	—	—	<i>c-l-(?)</i>	<i>tc-l-(?)</i>	—	—	—
<i>ka-l-</i>	—	—	—	—	—	—	—	—	<i>ka-l-</i>	—
<i>s-</i>	—	—	—	—	—	<i>s-, c-</i>	<i>s-, tc-</i>	<i>s-(?)</i> <i>tc-(?)</i>	—	<i>s-, c-</i>
<i>ts-</i>	<i>ts-(?)</i>	<i>ts-(?)</i>	—	<i>ts-</i>	—	—	—	—	—	—
<i>p-</i>	—	<i>b-(?)</i>	—	—	—	<i>p-</i>	—	<i>k-(?)</i>	—	<i>p-(?)</i>
<i>ki-, k-</i>	<i>ki-</i> (Sh. dialects)	<i>k-(?)</i>	<i>k'(i)-(?)</i>	—	—	<i>k-(?)</i>	—	<i>k-(?)</i>	—	<i>k-(?)</i>
<i>-ta</i>	—	—	—	—	<i>-ta (?)</i>	—	—	—	—	—
<i>-l(a)</i>	<i>-l, -r</i>	<i>-l</i>	—	<i>-l</i>	<i>-l(a)</i>	—	—	<i>-l</i>	—	<i>-lu-</i>
<i>-s(a)</i>	—	—	—	—	<i>-sa (?)</i>	—	—	—	—	—
<i>-p(a)</i>	<i>-c</i> <i>-p (?)</i>	—	—	—	<i>-pa, -ba</i> <i>(?)</i>	—	—	—	—	—
<i>-n(a)</i>	—	—	<i>-na</i>	—	<i>-na-x</i>	—	—	—	—	—
<i>-hi</i>	—	—	<i>-hi</i>	—	—	—	—	—	—	—

-*l(a)* has such a wide distribution that we may perhaps attribute it to the early Hokan period. Compound prefix-suffix absolutes are particularly common in Washo (*d . . . -l*, *ts- . . . -l*) and Subtiaba (*d- . . . -lu*). Perhaps the most significant point about these absolute noun affixes is the fact that the old prefix system tends to be best preserved in the south (Salinan, Chumash, Chontal, Subtiaba) and to be wanting or nearly so in the north (Yana, Chimariko, Karok, Shasta-Achomawi; prefixes hardly more than vestigial in Pomo). Esselen and Yuman seem to have a somewhat anomalous geographical position, being of the suffixing type. Washo is to be reckoned as belonging to the southern rather than the northern Hokan type. The table (p. 503) summarizes the main facts. A dash means that the element is definitely known to be lacking. A query means that there is some evidence for the element but that it is unsafe to assume it as vital. I have had to leave Seri out of the table for obvious reasons.

D. *Hokan Adjective and Verb Class-Prefixes*

One of the most far-reaching, as well as interesting, features of Hokan morphology is the use of a set of consonantal class-prefixes in the verb and adjective. Probably none of the dialects keeps the old system intact, but it is not difficult to get an inkling of what it must have been like from the survivals we still possess. The first indication of these generic prefixes, which probably defined such classifications as transitive, active intransitive, static intransitive, and adjectival (qualitative), was given by J. A. Mason in his treatment of Salinan.¹⁵ In this language there is a formal distinction in many cases between the transitive (or active) and intransitive (or static) use of the same stem, the former being characterized by prefixed *p-*, the latter by *k-*. The nominalizing *t*-prefix replaces these elements, as we have already seen. A few examples of the prefixes are:

k-enai "he hurt himself": *p-enai-ko* "I wounded him"
k-opolox "he commanded": *p-espolox-o* "he seized it"
k-a'kinyi "they thought": *p-a'ke'n-o* "I thought (it)"

¹⁵ See J. A. Mason, *The Language of the Salinan Indians* (University of California Publications in American Archaeology and Ethnology, 1918, vol. 14, No. 1), pp. 38-40.

Some time after the appearance of Mason's paper I pointed out¹⁶ a number of forms in Seri and Tonkawa which resembled closely the Salinan intransitives in *k*-. Lehmann's Subtiaba material throws the whole problem of Hokan verb-adjective classes into a deeper perspective. Aside from verbs and adjectives which possess no class prefix, such as are also numerous in Salinan, there are intransitives in *g*-, which correspond exactly to the *k*-forms of Salinan (and, no doubt, of Seri and of the languages of the Coahuiltecan group), transitives in *d*- which correspond in use to Salinan *p*-forms, and a well-defined set of adjectives in *m*-. All three of these important elements had been overlooked by Lehmann; at any rate, I do not find them spoken of in his grammatical remarks. In working through the Hokan material once more from the new point of view afforded by a comparison of Salinan and Subtiaba, I soon became convinced that there were important survivals of these Subtiaba elements, particularly of intransitive *g*- and adjectival *m*-, in languages where they had never been suspected. In Yana, for instance, there can be little doubt that the *m*-prefix exists buried as the petrified initial consonant of a number of "stems." Other class-prefixes than the transitive *p*- of Salinan, transitive *d*- of Subtiaba, intransitive *k*-(*g*-) of Salinan and Subtiaba, and adjectival *m*- of Subtiaba also appeared, particularly a *p*-(*b*-) adjectival element of Yana and Pomo.

As far back as 1907 Kroeber had pointed out certain puzzling alternations in Washo of the initial consonant of certain stems,¹⁷ e. g.:

*gi**p**us* "to lift": *bi**p**os* "to pick up, raise": (*u*)-*le**p**us* "to lift"
 (*u**ga*)-*yam* "to strike with a long object": *da**m* "to strike with
 a round object": (*dum*)-*ba**m* "to strike with the end of a
 long object"
*le**p* "to crush": *de**p* "to crush with a round object"; (*le**p*)-*ne**b*
 "to crush flat a round object"

¹⁶ See *Sup.*, pp. 69, 70.

¹⁷ See A. L. Kroeber, *The Washo Language of East Central California and Nevada* (University of California Publications in American Archaeology and Ethnology, 1907, vol. 4, No. 5), pp. 289, 296, 297.

The Washo forms given by Kroeber are far too few to throw much light on an evidently complex system of classifying elements, but even now the parallelism of Washo *g-ipus* "to lift" (without specified object?): *b-ipos* "to pick up, raise" (a specified object) with the Salinan forms in *k-* and *p-* is at least suggestive. Washo morphology needs looking into afresh and, when well understood, will probably throw much light on the fundamental morphological characteristics of the whole Hokan group.

Adjectives and Intransitives in m-. So large a proportion of the Subtiaba adjectives begin with *m-* (e. g., all five color adjectives listed by Lehmann are *m*-forms) that one soon suspects a prefix. Fortunately one is not left entirely to surmises, for a number of related Subtiaba words are found which show the stem without the *m*-prefix. The evidence for adjectival *m-* in Subtiaba is as follows:

- m-i'ca* "white," *m-i'ica* "clean": *t-i'tcu* "white" (probably nominalized form in *t-* < **t-i'ca-k*): *-g-i'ca* in *di-gi'ca* "white hair"; see no. 98
m-a'ca "green, blue": *d-aca-lu* "grass"; see nos. 38, 87
m-a'x- "more, superior" in *ma'x-mi:xn'a* "better": *a'x-* "old, mature, grown up, big," *d-aha* "maturity"; see no. 92
m-i'-gu'xku "hard": *gu'xku* "hard (wood)"
m-i'-ku'xi "brave": *ku'xa* "robber, thief"
m-i'-nanda "weak": *ci'-ni-nando* "estoy rendido"
Sq. *m-idagi-na* "black," *m-i'du'u* "night" < **m-idaki* or **m-idaku*: Coah. *tako-m* "night"; see no. 42
m-i'xn'a "good": Hokan **ix(a)na*; see no. 87
m-a'ca "raw" (originally "red?"); see no. 93
m-i'ka "sour": Hokan **ik'ai*; see no. 96
m-i'ta'u "sweet": Po. *b-itau*, *tu-itu* (red.); see no. 97
m-a'xi "full"; Yan. *b-a'ni-*; see no. 86
m-o'xmo "yellow" (red?), *m-o'xmo-ya* "color"; see no. 99
m-a'nga "red" (cf. Shoshonean *a'ŋka-* "red?")
m-i'u "bitter"
m-i'xtcu "broad"
m-ismi'du "narrow"
m-i'su'a "hard"
m-i'si'ta "high"; see no. 89
m-i'gi'n'u "heavy"
m-i'xnu "deep"
m-i'xka, *m-i'ka* "warm"
m-i'xnu (?) "yellow"
m-a'xma, *m-asma*, *m-a'ma* "quick, at once"

m-i·no, *m-i·na·u* "alone, self"; see no. 84
m-u·su, *m-u·sa* "beautiful" (perhaps borrowed from Spanish *hermoso*, as Lehmann suggests; if so, *her-* was dropped perhaps because of feeling for adjectival *m-*)

Perhaps a number of nouns belong here too (cf. *m-i·du·u* "night" above), e. g.:

m-ini·na "fog, darkness"
m-aḡpu· "body": *p-aḡpu·* "arm" (no. 1)
m-a·su· "thorn, spine, fish-bone": *i·su·* "bone" (no. 4);
 "thorn" < "bony, bone-like"?
-m-i·cu in *i·a-mi·cu* "urine," *k-i·a-mi·cu* "bladder" (*i·a* "water")

and several others. These may be substantivized adjectives but are too doubtful in any case to help us here. It is probably not an accident that the verbs in *m-* are either clearly intransitive or easily conceived as such. Presumably these are to be classed with the *m*-adjectives. They are:

-m-in^{vu}· "to fear"
-m-a·i "to be born"
-m-ai· "to be able"
-m-u·xi· "to paint" (probably denominative from stem of *m-oḡmo* "yellow")
-m-an^{vu}· "to know, to be wise"
-m-ada "to give" (without object; contrast *ika ni·mada* "you gave" with *iku na·cna* "I give you")

The *m*-forms so far considered all seem to have vocalic stems (it being assumed that the *m-* is a prefix). But there seems also to be a set of intransitive verbs and adjectives whose stems begin with a consonant and which are preceded by a homorganic nasal (*m*, *n*, *ŋ*). This nasal is in all probability the same element as the adjectival and intransitive *m-*. Such cases are:

-n-diegu· "to laugh" (no. 71) < **m-idié'gu·* (or **m-ilié'gu·*)?
-n-ta·u· "to be thirsty"
-n-distaa "to cough"
-n-di·yu "to be sick" (no. 95) < **m-adi'-yu* (contrast Yan. *m-a·di-* with different accent)?
-n-dayu "to read"
-n-di·hi· "to write"
-n-tca-wa "to make a noise, to scream"
-ŋ-giko "to be feverish": *gi·ko* "liver" (no. 15)

-*m-bi·ya* "to cry" (no. 64)
m-pa·xi "long, straight: *paxi*, *pa·hi*
 -*m-pa·u*, -*m-ba* "fat, big" < **m-up·aw* (no. 85)? but also *umba*,
ombo (with prothetic vowel colored by vowel originally
 following *m*-?)

From the standpoint of Yana itself there are no prefixes in the language. It is only on the basis of comparative evidence that one begins to realize that a number of old Hokan class prefixes are still traceable in Yana. Several formal peculiarities of a number of Yana elements become more intelligible when these prefixes are admitted, otherwise we are left with several quite meaningless first-position "stems" on our hands. Thus, primary *ma·si*- "to be ripe": secondary *-si*- "to be ripe, satiated" (e. g. *gi·si·tdi*- "to be satiated") can only be explained from the Yana standpoint as *ma·si*:-*-si*-, *ma*- being a "primary stem" with unknown meaning. Comparison with such verbs as *ma·la*- "to refuse" and *ma·si·dja*- "to be glad" yields nothing. Again, *maha*- "to melt" must either be dismissed as a disyllabic "stem" or analyzed mechanically as first-position stem *ma*-, of unknown meaning, and *-ha*- (cf. independent *ha*-) "water, liquid," *ha*- "to be wet." The truth of the matter, however, would seem to be that these are really disyllabic vocalic stems with adjectival or static *m*-prefix, hence *m-a·si*-, *m-aha*-. It is precisely the prefix which preserved the initial stem vowel that is ordinarily lost in Yana. Yana *ha*- "water," *ha*- "to be wet": *m-aha*- "to melt" (really "to be watering") is simply another example of the well-known Hokan alternation of **xa* "water": **axa*. It is remarkable, in any event, that the great majority of Yana verb-stems in *m*- are adjectival or static. Chance distribution would require a larger number of transitives (in which the *m*- properly belongs to the stem, e. g. *m·*-, *ma*- "to eat": Hokan **ama*·; *mu*·- "to work": Hokan **umu*·). Examples of prefixed *m*- in Yana are:

m-aha·- "to melt" (intr.): *ha*- "water" (Hokan **axa*), *ha*·-
 "to be wet"
m-a·si·- "to be ripe": secondary verb-stem *-si*- "to be satiated"
 (*m-a·si*- perhaps related to old stem **asi*- "sun," see no. 33)
m-a·di·- "to be sick": secondary verb-stem *-di*- "to be sick"
 (e. g. *dut·di*- "to be greatly sick"); Sub. *-n-di·yu* (no. 95)

- m-ilap-* "to wake up" (intr.): secondary verb-stem *-ilap-* (e. g. *'ip-'ilap-* "to impel-wake, to wake up" (tr.), *bui-'ilap-* "to wake up by kicking"); here *-ilap-* is evidently identical with *-ilap-* of *m-ilap-*, which cannot be analyzed as stem *mi-* + *-lap*¹⁸
- m-alcun-* "to stretch" (intr.): secondary verb-stem *-lcun-* "asunder; to split, rend, burst"
- m-aha-lai-si-* "to warm oneself by the fire" (*-aha-* perhaps related to *ha-* of *ha·mu·tdi-* "to be warm"; *-lai-* refers to "fire")
- m-a·sidja-* "to be glad": secondary verb-stem *-tc'dja-i-* "to be glad, impatient with joy"
- m-a·la-* "to refuse, not to want to do": Sal. *k-ile* "to be lazy," *m-ale* "to doubt"
- m-atc'i-* "to be melting"
- m-adjup-giri-* "fire is out"
- m-a·dira-* "(dead salmon) is rotten, decayed"
- m-alla-p'a-* "to be bad"
- m-alla-* "to stay away for a long time"
- m-a·t'i-* "to be tabooed"
- m-a·p'djamai-* "to be supernatural"
- m-akau-* "(baked bread, dried earth) cracks"
- m-a·tsk'i-* "feathers are old, worn out": Sub. *a·x-* "old" (no. 92)
- m-u·du-i-* "yellow" (no. 99)
- m-a·ga-* "to be swollen, to swell"
- m-aits-gini-* "foot, hand, sleeps"
- m-a·lin-si* "common people" (*-si* is agentive; cf. *lini-* "little"?)
- m-a·ladju-* "to be winter"
- m-andja-* "to be sharp"
- m-a·lal-* "to be sharp and black"
- m-i·djat-lcu-* "clothing is torn"
- m-i·tsu-* "to be scratched"
- m-i·kai-* "to be angry"
- m-i·dja* "to be heavy"
- m-iis-* "to be possessed of" (with incorporated object)

In Pomo too *m-* seems to be used as adjectival and intransitive prefix, though the material is more scanty than in Subtiaba and Yana. Examples are:

E. Po. *m-inam* "to be full, to fill" (cf. no. 86)

E. Po. *m-ato* "large": *b-ate*, *b-ate-n*, *b-a'te*, *b-ate-ne-k*, *te*, *ti* (other dialects)

¹⁸ See E. Sapir, *The Fundamental Elements of Northern Yana* (University of California Publications in American Archaeology and Ethnology, 1922, vol. 13, No. 6), p. 22, where *mi-lap-* is suggested (also *mi·k'ai-* "to be angry" and other similar forms).

- S. E. Po. *m-axaii-t* "sweet" < **-asayi-*? (for S. E. Po. *x* < *s* cf. *bexē* "meat": N., E., S.W. Po. *bice*; *xa* "fish": N., C., E., N. E. Po. *ca, sa*), note parallelism to S. E. Po. *m-atsaki-t* "bitter": Sal. *k-esiyu-k* "sweet," *k-esi'o-hol* "salty"
- S. E. Po. *m-atsaki-t* "bitter": *tcaha, djaha* (other dialects)
- N. E. Po. *m-ukauka* "dead": E. Po. *xauk-* in *xauk-mudal* "dead" (properly "dead-lying") < *(*u*)*k'auk-* (for N. E. Po. *k'*: E. Po. *x* cf. *ka* "water": *xa*; *kabe* "rock": *xabe*; *kali* "tree": *xale*)
- N. E. Po. *m-ikalmi* "round"
- S. E. Po. *m-utsa-ka* "whiskey" < *bitter-water"? (cf. *-ka* "water")
- m-ice, m-eccu, m-iceu, m-ceu, m-ixe-t* "stinking": Chim. *-m-itcxu-* "to stink"; Sal. *m-e's* "to smell, scent" (are Kwakiutl *me's-* and Nootka *mis-* "to smell" remotely related?)
- N. Po. *m-itset* "to laugh": Yan. *djal-* "to laugh"

A few Pomo nouns in *m-* look as though they might be substantivized verbs:

- m-atci, m-adji, m-itci-l* "day" (properly *m-atci* "to be day," **m-atci-l* "day"?): Hokan *usi* "day" (no. 33)

In Salinan the *m*-prefix, which seems to belong to the very oldest stratum of Hokan formal elements, had evidently long ceased to be productive, its place being taken by intransitive *k*- (see Mason's long list of *k*-adjectives).¹⁹ This is shown by the presence of derivatives based on older *m*-forms, e. g. substantival *t'o-mas* "grass": Subtiaba *m-a'ca* "green," *d-aca-lu'* "grass" (see nos. 38, 88). It seems very possible that in a number of instances *m*-adjectives (and intransitive verbs) were treated as bases for new adjectives (and verbs) in *k*- (or *t*-, *s*-), in some cases with the stem vowel repeated between the new prefix and the older *m*-, e. g.:

- k-am-a'cu* "sweet" < **k-am-a'syu* < **k-am-a'siyu*: S. E. Po. *m-axaii-t* "sweet" < **m-asayi-t*; Yuman **m-ayu-l-* "sweet" < **m-asyu-l-* (like Yuman **iyu* "eye" < **isyu*, see no. 9), Moh. *m-aḍul'-k*, Dieg. *m-iyul'-k*; Sal. *k-esiyu'-k* "sweet," *k-esi'o'-hol* "salty" < **k-asiyu'-*. Hence Sal. *k-ama'cu* and *k-esiyuk* "sweet" may both contain Hokan **asiyu*
- k'-m-eio*, *c-m-o!* "heavy, deep (snow)"
- t-em-itcu-ko* "holey": Sal. *m-etsiliu* "perforation," perhaps properly "to be perforated in several places" (stem **-itsiu* with pl. *-l*?)

¹⁹ Mason *op. cit.*, pp. 149-151.

k-om-ux "elder" <*(a)*m-ayaw*: Sub. *a-x-* "old," *m-a-x-* "superior," Chim. *haw-i-* (no. 92)
k-um-tica "brown" (no. 99)
s-m-at "beautiful," plur. *s-m-ahate-t* <Hokan **m-ati*: Po. *k-adi*, *k-idi*, *k-odi*, *k-udi* "good"

However this may be, there seem to be a number of Salinan forms in which initial *m-* may be analyzed as a prefix, e.g.:

m-e's, plur. *m-isli-p* "to smell, scent" (cf. Pomo forms above)
m-aʔ'al "white"
m-ats'e-ko', *m-atse-ko* "chipmunk": Hokan *m-a'su-* "red" (no. 93)
m-atcakat (M) "to be outside"
m-a'we-xe (M) "to stand firm, resist": *exwe* (dit.)
m-anketso (M) "to insert, add"
m-illac "to make": *eta'* "to make"
m-a'n (M) "to pass, enter"

The forms marked (M) are given by Mason as having movable *m-*, but he does not state on what evidence he considers the consonant a prefix. Perhaps the forms he lists with (*m*)- are simply second person singular imperatives with prefixed *m-* "thou," in which case they naturally do not belong here.

The *m*-prefix is no doubt found elsewhere in Hokan, but the evidence is sparse at present. In all probability it was generally submerged in the stem, as in Salinan, e. g.:

Se. *m-osso-t* "yellow," *ko-m-asso-t* "brown"; Chim. *himamsu-t* (red. from basic **m-asu-*) "green, blue, yellow": Sub. *m-a'ca* "green, blue" (no. 88)
 Chim. *masomas* "red salmon" (red. from basic **m-aso-*?); Com. *-m-so-l* "red"; Cot. *m-sa-e* "red"; Sub. *m-a'ca* "raw (meta)": Chum. *t-asu-n* "red"; Po. *t-as* "red," *k-'asi-l* "redwood." Hokan **m-a'su-*, **t-a'su-*, **k-a'su-* "red, raw" (no 93)?
 Yuman *m-asa.-m*, *im-ica-pa*, *um-esa-p* "white"; Ton. *m-as-lak*; Cot. *m-eso-i*; Sub. *m-i'ca*: Sub. *t-i'tcu'*, *-g-i'ca* (no. 98)
 Ton. *m-akik* "yellow"
 Yuman **m-ayu-l-k* "sweet": Hokan **asiyu* (see above)
 Chim. *-m-itxu* "to stink" (see above)
 Chim. *-m-ana-t* "ripe" (no. 94); but cf. *ho-mat* "ripe"

Other examples of *m*-adjectives in Chimariko may be:

-m-ama-t "alive": Hokan **ama* "house; to dwell" (no. 78)
m-ata'i "clean"
m-e'ne'i, *m-ene* "white"

The Esselen evidence for intransitive (and nominal) *m-* is naturally sparse but happens to be not without interest:

m-alpa-pic "hablador, gossip": *alpa-pisi* "hablador"
m-atsi "mother": *atsia*; Po. *tce-de*, *-tce-n*, *-ce-k*; Ton. *issa*
m-acai-pa "to be hungry"
m-alitax-pa "there is nothing"
m-alinaika-pa "much"
m-atshai-ba "whites, gente de razon" (no. 98)
m-awi "to sing"
m-epe "to dance (also written *mefpa*, i. e. *m-ep̄pa*, *m-ep'a?*):
 Chim. *-sa-mxu-* "to dance" < **mp'u* (for Chim. *xu*
 < Hokan *p'u* see *Yan.*, nos. 107, 109, 110, 111); S. E. Po.
xe-mfom "to dance" (*xe-* probably "to sing," cf. S. E. Po.
xe-kolne "to sing" and *ke-*, *xai-*, *ih-* of other dialects;
-mfom < **mp'o-m*, cf. *fa* "excrement" < (a) *p'a*)

Other Adjectival Prefixes in Hokan. An adjectival *p-* (or *b-*) prefix, apparently not found in Subtiaba, may be uncovered in Pomo and Yana, possibly also elsewhere in Hokan-Coahuiltecan. Pomo examples are:

b-ate, *b-a'te*, *b-ate-n*, *b-ate-ne-k* "large": *m-ato*, *ti*, *te*
 N. Po. *b-itcu* "small": S. Po. *k-itci-du* (see no. 91)
 S. W. Po. *p-icu-du* "bad" (*-du* as in S. Po. *k-itci-du* "small"),
 C. Po. *b-ase-t* (cf. N. Po. *t-iic* "bad?")
 S. Po. *-b-itan* in *kodi-bitau* "good-tasting, sweet": S. W. Po.
tuitu "sweet" (red.; see no. 97)
 E. Po. *b-iko* "bitter": Sub. *i'ko* "gall," *g-i'ko* "liver" (no. 15)
 E. Po. *b-agil* "long"
 S. E. Po. *b-itsili-n* "long": Chim. *hitcun* "long," *xu-itcula-n*
 "not-long, short"; Yan. *djul-* "to be long"
 E. Po. *p-itan* "white" (Kroeber writes *p-ilau*): N. E. Po.
taiya (read *laya?*); Sh. *ilayu*; Yan. *la-lam-*
 N. E. Po. *p-etene* "angry"

In Yana there is a considerable number of adjectives beginning with *ba-*. These I have hitherto analyzed either as polysyllabic stems (e. g. *ba'ni-* "to be full") or as containing a first position stem *ba-* of general or unknown significance (e. g. *ba-gan-* "to be short"). It now seems best to look upon these forms as containing an adjectival *b-* prefix which is identical with Pomo *b-*, *p-*, and parallel to the adjectival *m-* discussed above. The *a*-vowel is probably generalized from stems which properly began with *a* (see, e. g., *b-adjal-* "large" and *b-a'ni-* "full" below). As initial

short vowels generally disappeared in Yana (e. g. *djul-* "long" < **idju'la-*) unless preserved by a prefixed consonant, forms like **badjal-* (assimilated from **bidjal-*) and *ba'ni-* (with original *a*) would come to be felt as analyzable into *ba-djal-*, *ba'-ni-* (phonetically like, e. g., *ba-djil* "to run in a circle") rather than into *b-adjal-*, *b-a'ni-* when the adjectival prefixes (*m-*, *b-*, *d-*) had ceased to be productive. The "pseudo-stems" *ba-* and *da-* thus abstracted may have crowded out the forms in which *b-* and *d-* were followed by other vowels. Examples are:

b-agan-(gu-) "to be short" (cf. *-'gan-*, Yahi *-sgan-* "to break"?)
b-alcillai- "to be thick"

b-agul- "to be tired": secondary stem *-gul-* "tired, obstructed"

b-atsau- "to be caught in a cleft": secondary stem *-tsau-* "in a cleft"

b-adjal- "to be large": Sal. *k-etcq-* "great," *ti-k-etcan-o* "his size"

b-alat'-p'al-gu- "to be flat"

b-a'ni- "to be full": Sub. *m-a'ni-* (no. 86)

b-djil- "to be coiled": *-djil-* "around, in a circle"

b-asi- "to be yesterday, night (as lapse of time)": HOKAN **asi* "sun, moon, day" (no. 33)

b-a'wi-sa- "to be night, dark" (*-sa-* "off, away" frequently used in adjectives): Po. *iwe*, *i'we*, *d-iwe*, *d-uwe* "night"

b-ahulului-gu- "to be round, spherical"

b-agulai-maki- "to be humpbacked" (*maki* "back")

b-atsdjai-gu- "to be very glad": *m-a'sidja-* "to be glad"

b-ak'u- "to spill" (intr.): secondary stem *-k'u-*, *-k'u-* "crumple, finely divided pieces"

A possible Chimariko example of adjectival *p-* is:

p-ala "strong": Yan. *lau-* "to be strong"

Possible Coahuiltecan examples are:

Com. *p-ese'x* "good": Chim. *hisik-ni* (*hisiki-*), *hisi-ta*; Sal. *sa'x*, plur. *sake-hel*, HOKAN **isa'k'i* "good"?

Com. *p-ele* "good"; Karan. *p-lu-*; Karan. *k-laban* "well, healthy"

A HOKAN adjectival *d-* (*l-*) prefix (see no. 121) may be identical in origin with the far more clearly ascertainable nominal *d-* (no. 120). Subtiaba examples are not common, perhaps because *m-* was generalized as the adjective prefix par excellence:

d-a'gu "large" (no. 90): Se. *k-ako-t*

d-a'ca "hairy": *d-aca-lu-* "grass" (no. 38), *m-a'ca* "green" (no. 88)

Pomo examples are:

- N. Po. *d-atoi* "striped"
- E. Po. *t-oro-* (perhaps related to N. Po. *d-atoi*) in reduplicated *toro-toro-k* "striped"
- S. W. Po. *d-akati* "striped"
- N. Po. *t-'as* "red": Hoka **m-a'su-* (no. 93); S. W. Po. *k-'is* "red"; Po. *k-'asi-l* "redwood"
- N. Po. *t-iic* "bad": C. Po. *b-ase-t*
- N. E. Po. *t-uya* "small": S. Po. *-uya* in *baiya-uya* "man-small, boy," *mata-uya* "woman-small, girl"

In Yana there is a class of adjectives in *da-* which refer to appearance, including color (e. g. *da-mbu-sa-* "to be beautiful," *da-lili-sa-* "to be smooth," *da-'t'au-sa-* "to be flat," *da-lsgai-sa-* "to be green, blue," *da-p'al-sa-* "to be black," *da-p'i-ti-sa-* "to be blue," *da-mu'dui-sa-* "to be yellow," *da-wat'-sa-* "to be brownish red"). This *da-* may be identical, at last analysis, with a verb stem *da-* "to look" (e. g. *da-lil-* "to look back," *da-'t'dja-* "to look up into the air"), but it seems far more likely that these two elements are quite distinct. The *da-* is morphologically parallel to adjectival *ba-* (cf. *da-sira-kai-sa-* "to be all white in appearance" with *ba-sira-kai-gu-* "to be white all over one's head"; *da-wat'-sa-* "to be red" with *ba-wat'-gu-* "one object is red") and it seems possible that it is generalized from stems which originally began with *a* and were preceded by adjectival *d-* (e. g. *da-wat'-* "to be red," originally *d-awat'-* "to be blood-colored," Hoka **axwa'ti-*, see no. 3). The Washo adjectival *d-*, as Kroeber pointed out long ago, is perhaps identical with the nominal *d-*. Examples are:

- d-anau* "good": *anau* "good" (properly "to be good"?) (no. 87)
- t-'iyeli* "large"
- t-'ε'kyu* "many"

Here may belong also the color-adjectives in *dal-* and *del-* (e. g. *dal-cocon* "red," *dal-tsatsami* "green, yellow," *del-pi-lpili* "blue," *del-elegi* "dark red") which bear a striking resemblance to the Yana adjectives of appearance in *da-*. The Salinan adjectival *t-*, *ɬ-* can hardly be disconnected from the common nominal element *t-*, *ɬ-*. Examples are:

t-elwa-ne "strong, fierce" (literally "man-ly"): *lu-wa* "man, male"

t-emilcu-ko "hole-y": *metsiliu* "perforation"

t'-xauwat "yellow": *s-xauwit* "acorn"

A probable example of adjectival *t-* in Chumash is:

t-asu-n, *t-ase-n* "red": *uks-tai* (read *u's-?*); Hokan **-a'su*, **m-a'su*, **k-a'su*, **t-a'su* (no. 93)

Corresponding to the *r*-nouns of Subtiaba there seems to be also a set of adjectives in *r-*. The examples are not numerous:

r-anga "old, worn out"

r-umbu "roasted" (also as verb: *rumbu* "to roast")

r-itci, *r-i'si* "small, lean, young": *-tci*, red. *tci'tci* "small, child" (no. 91)

A Salinan *l*-prefix corresponding to this *r-* is suggested by:

l-amayu, *l-amai* "right"

l-apai "left"

The *l-* of these examples is very probably identical with the nominal *l-* already discussed.

Corresponding to the *s-* (*c-*) of Subtiaba nouns is a pre-consonantal *s-*, *c-* in a few adjectives:

s-tan^{vu} "lean"

c-n^{va}ay^u "erect"

A number of *s*-adjectives may also be established for Salinan:

s-ki'ntui, *s-kunt'ui* "small, thin, lesser"

s-ki'tana, *s-kotan* "small"

s-kusna "half (moon)"

s-mat (or *s-m-at*) "beautiful"

s-pukita "upper"

s-ti'yo'owan "pretty, graceful"

s-wanan "lonesome"

s-tikwan (Mig.) "young, new": *k-teka* (Ant.)

A corresponding *ts*-element seems to be found in Chumash:

ts-owis "bad" (S. Luis Obispo)

ts-exu "much" (S. Luis Obispo): *uhu* (S. Barbara)

Intransitives in g-. We have already seen how basic in Salinan is the distinction between intransitives in *k-* and transitives in *p-*.

It can be shown that an analogous relation holds in Subtiaba between *g*-forms and *d*-forms. The *g*-verbs seem to indicate both the active intransitive and the static and thus occupy a position midway between the adjectival and static verbs in *m*- and the transitives. Not all transitives begin with a *d*- nor are all intransitives *g*-verbs, but the *d*-verbs are so preponderantly transitive and so many of the *g*-verbs are intransitive that it seems impossible to resist the inference that both *g*- and *d*- are prefixed elements and that they are respectively intransitive and transitive in force. Fortunately, we are not left entirely to statistical surmises but have several clear instances of *g*- alternating with other elements (*m*-, *d*-). It goes without saying that the Subtiaba idiom is not always in accord with English usage, a number of *g*-verbs appearing transitive in translation, but on the whole their intransitive character is apparent enough. It will be best to list all the examples of *g*-verbs, so that the reader may draw his own conclusions. Probable intransitives are:

- g-u'ga* "to touch" (as intr., e. g. *iku' ni'-gu'ga* "I touched");
d-u'ga (tr., e. g. *i'na gi'-du'ga* "cara tocada"; *da'-tcu' d-u'ga d-a'gu'-lu'* "do not touch the fire!")
- g-apu'* "to sleep," *g-apa* "acostado": *d-apa* (verbal noun, e. g. *iku' na'-tcu ma d-apa* "I go with the-sleeping, I go in order to sleep, I shall sleep"); see no. 80.
- g-iu* "to eat" (intr., e. g. *iku' na'ka g-iu* "I go to eat"; *iku' a'-na-ma'i g-iu* "I cannot eat"); *m-i'u* (e. g. *ηω'i ga'n'nu m-i'u* "flesh to eat"; for *m*- see no. 114; see no. 67. Transitive forms of "to eat" seem to be expressed by another verb, *-su* (e. g. *ni'-su iku' ηω'i-lu'* "I ate the meat")
- g-i'ma* "to ascend": *d-ehma-lu* "sky"; see nos. 44, 60
- g-agnu* "to run": *d-agalni* "runner"; see no. 75
- g-i'ca* "white (e. g. *di-gi'ca* "white hair"): *m-i'ca*, *t-i'tcu'* "white"; see no. 98
- g-a'ya* "to have, hold, carry," *g-aya'a* "to bring, drag" (probably intr., e. g. *iku' do'-na-a'-gaya'a* "no estoy trayendo"); *d-a'ya* (probably tr., e. g. *d-a'ya-lu' seku'* "guard, hold the child!"); see no. 58a
- g-ωto* "to wait, hope": *d-a'ti(-lu')* "espérese!"
- k-uni'nu* "sleeping," *k-u'ninu-mba* "sleepy-head": *na-uni'nu* "to be sleepy"
- g-oo* "to winnow, filter, squeeze out" (intr.?): *d-oo* "to squeeze out, press out" (tr.?)

- gi·tu·* "to begin"
ga·ta "to arrive"
gu·wa, guŋwa "to bathe" (intr.)
g·amo "fire burns"; see no. 59
goho "to fall"
g·a·u "to go"; see no. 70
g·a·wi·, -g·a·gwi· "to flee, run"; see no. 70
gi·i· "sun goes down"
gaʒnu· (gwa) "to go out (of the house)"
gi·sto "to live, be"
gaʒmo, gaʒma·ya "to know"
ku·ma "to deny"
gaa "to foam"
gu· "to sleep" (*g-* probably belongs to stem); see no. 81
gu·sta·ma "to appear"
na·goʒta·lu· "volverse, to return"
gi·ta "there is"
ki·ʒi "there is"
k·a·mo "to sit," *k·a·ma goo·yu·* "estoy sentado en la casa";
 see no. 78
g·an·u· "to die"; see no. 65
g·i·ʒna, g·aʒna "to dance," *g·u·ʒna* "dance" (n.)
ga·yu· "to be angry"
gau· "drunk, drunkard"
gu·ʒku· "firm"
koho "to stand" (?; in *maʒpu· koho* "erect, straight-standing")
ga·ga "cooked"
gaki· "pregnant"
gayin·a "hole"
g·oco "to wake up" (tr., intr.): *d·a·co* "to get up" (?)
gi·hi (i·ya) "to pour out (water)"
ga·ya "to pass (the night)" (e. g. *iku· na·ga·ya mi·du·u·lu·*
 "paso la noche")
gu·ci· "to guard, keep"
ga·salu· "to make a knot"
gin·a·u· "to mix"
ga·du "to sow (maize)"
gu·ʒa "to steal, rob," *ku·ʒa* "thief"
gu·mba "to divide": *s·kwamba* "to cut" (probably caus.:
 "to cause to divide, be divided")
gatca·pan·a "to cover" (fut. *ga·?*)

In a number of cases it seems safer to interpret *ga-* as the future particle (see no. 106) than as the *g-* prefix we are discussing. Forms in *na-ga-* prove nothing, as "present" *na-* may be combined with "future" *ga-*. Such verbs are:

- na-gasi·hi* "to give birth" (cf. *naḡka gasi·hi* "will give birth," literally "goes to give birth")
na-gani·ku· "to marry" (probably *ga-ni·ku* "will-make-female, will take to wife," periphrastic verb in *-ni·* "to make," such as are common in Subtiaba)
na-ga-spa·tu· "to chop" (tr. in *s-*)
na-ga-nʷo·a "to hunt" (cf. *a·ma gi·nʷua* "fish-net")

Salinan intransitives in *k-* have already been discussed. It will not be necessary to give a long list of examples here as the element is perfectly clear both as to existence and usage. The reader will find a large number of intransitive *k-*verbs and *k-*adjectives listed in Mason's study of Salinan.

In Pomo there is good evidence for the presence of a *k-*prefix in adjectives. Examples are:

- S. W. *k-'is* "red," Po. *k-'asi-l*, *k-asi-l* "redwood": *t-'as* "red,"
 Hokan **a'su*, **m-a'su* (no. 93)
 S. *k-itci-du* "small": N. *b-itcu* (no. 91)
k-apoc, *k-apuc* "short": *buutc*, *boto*
 N. E. *k-ului* "short": N. E. *ula-* "boy, girl"; Chim. *ule-ta* "small"
 S. E. *k-ata* "old woman": S. E. *m-utui* "old man," Po. *ma-tea*,
ma-tiai ma-tu-l "old woman" (*ma-* "female")
k-ale, *k-aḡe*, *k-a'te* "white"
 N. *k-atse* "black"
k-'ili, *k-'li*, red. *kilik-kilik* "black"
 E. *keda-keda-k* "red" (red.)
k-adi, *k-idi*, *k-odi*, *k-udi* "good"
k-ahma, *k-amat*, *k-ahmati*, *k-amale* "angry"

Possible examples of *k-* in intransitive verbs are:

- kata* "to taste" (in N. *kidi-kata* "good-tasting, sweet"; E. *keresup-kata* "sweet")
 S. *katan* "to run"
 S. E. *kana-kit* "to sleep"
 N. *kaman*, C. *kamam* "to awaken"
 N. E. *kamantu* "to like": E. *mara* (?)
 C. *kadetc* "to fight"
 E. *kilmahwak* "to fight"
katca, *katcat* "to cry"
kuwai "to laugh" (but also *cowai*, *tcuwai*)
 E. *kopxun* "to stand"

The Seri evidence is clear for the use of *k-* as an adjectival (and numeral) prefix:

k-evil "red"

k-maso-t "yellow," *ko-masso-t* "brown": *mosso-t* "yellow"; Sub. *ma'ca* "green, blue" (no. 88)

k-opol "black": Yan. *p'al-*, *-p'al-* "black"; Karan. *pal*

k-ovil "blue, green"

k-o'po "white" (read *k-op'o?*): Chum. *pupu* (red.) "white";

Was. *-p'poi* (red.); Chon. *-fuka*; Com. *-pok*, *-puk*;

Karan. *peka*

k-ako-t "great": Sub. *d-a'gu* "large" (no. 90)

k-i'pi "good"

k-axku-m, *k-uxo-m* "two": Hokan **axwa(ku)* (no. 101)

k-axpa-m "three" (no. 102)

k-osox-t "four": *sor-ku-m* "four"

It is possible that these examples are merely instances of a wider use of *k-* as an intransitive or static verb prefix.

The evidence for *k*-intransitives and adjective-verbs outside of Subtiaba, Salinan, Pomo, and Seri is scanty, yet perhaps not altogether negligible. The Washo material is inconclusive:

g-ipus "to lift" (without specified object?): *b-ipos* "to pick up, raise"

giti "to bite"

galam "to like"

gayam "to strike, hit"

gegel "to sit" (sing.)

Possible Chumash examples are:

k-opo-k "dead": Sub. *g-apo* "to lie," *g-apu-* "to sleep"; Chim. *-po* "to sleep" (no. 80)

kakan "to stand"

Possible Esselen examples are:

k-olhala, *k-olxala-bic* "hablador, story-teller"

k-oso- "to sit down": Sub. *-tsu* "to be"; Yan. *dju-* "to dwell, sit" (no. 57)

In the Coahuiltecan group intransitive (or adjectival) *k-* is almost certainly found:

Ton. *k-opol* "round": Ton. *pilil* "round" (with final reduplication); Po. *pololo* (with final reduplication)

Cot. *k-enas* "good": Ton. *hinox*; Sub. *m-i'xnu'a*; Was. *anau* (no. 87)

Coa. *k-'aux* "bad" (read *k-'ax?*): Ton. *ex*

Com. *k-i'ax* "small, little, young": Ton. *ca-xun*; Coa. *ca-n*; perhaps also Sub. *se-* of *se-ku* "child" < **isa-k'u?*; see no. 54.

Transitives in d-. It is not clear if every case of *d-* alternating with intransitive *g-* is to be interpreted as a transitive element. It is at least conceivable that where this *d-* occurs in imperatives or prohibitives (e. g. *da'tcu d-u'ga d-a'gu-lu* "do not touch the fire!" *d-a'ya-lu seku* "hold the child!" *d-a'ti* "espérese!") we are really dealing with imperative *da-*, though Lehmann says nothing to justify us in believing that this prefixed particle can replace intransitive *g-*. Fortunately there are other cases of *g-*: *d-* (e. g. *gu'ga* "to touch": *i'na gi-du'ga* "cara tocada"; *goo: doo* "to squeeze out") which show that not all cases of *d-* forms from *g-* verbs can be explained as either nominal derivations in *d-* (see *g-apu* "to sleep": *d-apa* above) or as imperatives in *da-*. We are practically driven to assume a transitive prefix *d-*. The evidence of the mass of *d-* verbs supports this view. This *d-* prefix is likely to prove identical with the verb *da* "to make" (cf. periphrastic use of *ni* "to make, do" in compound verbs), but it is evident that the *d-* forms must be of great age in any event. The examples are:

doo "to cease"

d-oo "to press out, squeeze out": *g-oo* "to winnow, filter"

da'xkwa "to bake"

i'na gi-du'ga "cara tocada": *g-u'ga* "to touch"

dia-ma "to put, place"; see no. 69

too (gwa) "to enter (the house)"

taxia "to take grains of corn off of"

dantca'ku "to tell"

da'ya "to find" (cf. *-ya* "to see," no. 76?)

da'tco "to hear"

da'tco "to knock"

ti'gu "to comb"

twi "to suck at"

da'rma'ta "to open"

tinga "to roast"

(i'ci) gi-du'wa "(maíz) tostado"

na-data "to say, speak, talk": *na'-ata, na-to*

di'i "to peel (fruits)"

dandi "to blow at, soplar"

do'ko (gwa) "to close (the house)"; *do'xko* "to close, cover"

da'wi "to deceive, tell a lie to"

na-deri'a: n-eri'a "to kill," *ra'bu gi-yeri'a* "killed person"

dwaco "to take away, pull out (e. g. hair)"

d-iaxa "to desire": *ya'xa* "to think," *ya'xa-la* "to seek"

gi-du'sna gami "pelea(n)do entre sí" (*gi-* is past passive participle)

Such alternations as *-data* "to say": *-ata* and *-deri'a* "to kill": *-eri'a* seem to be transitive parallels to intransitive cases like *kuni·nu* "to sleep": *-uni·nu* (see above). In a number of cases the *d*-verb is intransitive in translation:

- da'co* "to get up"
- diko* "to appear"
- da'u* "to feel, feel to oneself"
- da'u* "to descend"
- do'si·* "mentiroso"
- daɣka* "to stink," *daɣku* "to smell, be fragrant"
- da'wa*, *da'gwa* "there is not": Sal. *k-awa* "to lack" (see no. 70a)
- ta'u* "to sit": Hokan **awa* (see no. 77)

Such intransitives may well be transitives, however, from the Subtiaba standpoint, e. g. *d-aɣka* "to have, make an odor, produce a smell," *d-a'wa* "to have a lack."

The class of transitives in *d*- cannot be definitely proved for other Hokan languages, but there are at least indications that it exists also in Washo, e. g.:

- depu* "to stab"
- dalik* "to strike, hit"
- dabem* "to strike, hit"
- degem* "to meet, come to"
- daŋal* "to hunt"
- damal* "to hear"

The last example is perhaps a transitive denominative from an old stem for "ear": **d-ammal* < **d-asmal* "to give ear" (cf. Sal. *p-esna*- "to hear, listen"?); see no. 7. Such consonantal alternations, moreover, as *-yam* (in *uga-yam* "to strike with a long object"): *dam* "to strike with a round object": *-bam* (in *dum-bam* "to strike with the end of a long object") and *lep* "to crush": *dep* "to crush with a round object", *-dip* (e. g. *de-dip* "to crush with the hand") may involve an old transitive *d*-prefix.

Other Transitive Prefixes. The common transitive *p*-prefix of Salinan has already been discussed. Outside of Salinan I find:

- S. W. Pomo *p-akum* (or *pa-kum*) "to kill": C. Pomo *kum* (cf. Chim. *-ko-* "to kill"?)

but this example is too obscure and too isolated to count for anything. More suggestive is Washo *b*- in certain transitive verbs alternating with *g*-, *a*-, and other consonants, e. g.:

-bam (of *dum-bam*) "to strike with the end of a long object":
dam, *-yam* (see above)
bipos "to pick up, raise": *gipus* "to lift," *u-lepus* "to lift"

What is almost certainly a transitive (causative) prefix, *s*-, *c*-, is found not infrequently in Subtiaba, nearly always before consonants:

s-toxma "to bind"
s-kwamba, *s-gwamba* "to fell, cut (wood)": *gu'mba* "to divide"
(ga-)s-pa'tu "to chop"
s-padiku "to shake"
s-manga "to put on a load (e. g., child on one's back)"
c-kama "to reach"
c-no "to give"
c-kamo "to seize, hold"
c-nlo'ta "to spit"
c-mi "to sew" (<*s-ima-t, denominative of *ima "hair"?;
 cf. no. 52)
c-indiya "to gather, harvest"
c-kelcu "to hunger"
c-ti'ya "to be ashamed"

A suggestive parallel example of what is perhaps a survival of causative *s*- may be found in Yana:

Yahi *-s-gan-* "to break" (secondary verb stem), C. Yana
-'gan-: *b-agan-* (or *ba-gan-*) "to be short" (originally
 "broken, fragmentary"?)

General Survey of Hokan Verb Class-Prefixes. The material that we have passed in review, scanty as it is, seems to leave little room for doubt that Hokan originally possessed a set of consonantal verb prefixes of a generic type. The elements that have the best claim to be recognized as archaic rather than as of secondary dialectic origin are:

m-, adjectival, (static intransitive)
t-, adjectival
k-, intransitive, (adjectival)
p-, transitive

Other elements, like transitive or causative *s*-, may well be equally archaic, but the evidence is too scattering to justify a definite statement. Salinan and Subtiaba seem to preserve the old system of prefixes as a live mechanism where the other languages can

HOKAN VERBAL CLASS-PREFIXES

	KAR.	SH.-ACH.	CHIM.	PO.	YAN.	WAS.	ES.	SAL.	CHUM.	YUM.	SE.	CHON.	SUB.
<i>m</i> - (adj.); static intr.			<i>m</i> - (adj.) (?)	<i>m</i> - (adj.); intr.)	<i>m</i> - (adj.); intr.)		<i>m</i> -	<i>m</i> - (adj.); <i>m</i> -(adj.); intr.) (?)		<i>m</i> - (adj.) (?)	<i>m</i> - (adj.) (?)		<i>m</i> - (adj.); intr.)
<i>p</i> - (adj.)				<i>ba</i> -		<i>d</i> -, <i>t</i> -		—	<i>t</i> -, <i>t</i> -				—
<i>t</i> - (adj.)				<i>da</i> -				<i>l</i> - (?)	<i>t</i> - (?)				<i>d</i> - (?)
<i>l</i> - (adj.)				—									<i>r</i> -, <i>t</i> - (?)
<i>s</i> - (adj.)				—				<i>s</i> -	<i>ts</i> - (?)				<i>s</i> -, <i>c</i> - (?)
<i>k</i> - (intr.)				—			<i>k</i> (?)	<i>k</i> - (intr.; adj.)	<i>k</i> - (?)		<i>k</i> - (adj.)		<i>g</i> -
<i>t</i> - (tr.)				—				—					<i>d</i> -
<i>p</i> - (tr.)				—				<i>p</i> -					—
<i>s</i> - (tr., caus.)				—				—					<i>s</i> -, <i>c</i> -

apparently show only survivals, but it is quite possible that if we had reasonably full data for Washo and Seri, we should have to number these among the archaic languages as well. The following table of the distribution of the adjectival and verbal class-prefixes is necessarily even more fragmentary than the corresponding table for the absolutive noun affixes. It is given rather as the statement of a fundamental and far-reaching problem needing investigation than as a satisfactory formulation of the facts.

The lack of entries for Karok, Shasta-Achomawi, and Chontal and the paucity of entries for Yuman and Chimariko prove little or nothing because for none of these languages except the last have I anything available but the most fragmentary material. However, it is clear that the characteristic development of intransitive and transitive class-prefixes which we have in Subtiaba and Salinan, and perhaps in Washo, is absent in Chimariko and Yana. It looks, then, as though it was the southern, rather than the northern, Hokan languages that best preserved the archaic features of the Hokan system of verbal class-prefixes. This accords with the greater conservatism of the southern languages in the use of absolutive nominal prefixes.

If we ruthlessly eliminate at this preliminary stage of linguistic inquiry all evidence that is weak or ambiguous, we can still rest a reasonable case for an old Hokan system of "classifying" or generic prefixes in the noun, the adjective, and the verb on the following condensed table:

	PO.	YAN.	WAS.	SAL.	CHUM.	SE.	SUB.
<i>t</i> - (nominal)			<i>d</i> -	<i>t</i> -, <i>t̥</i> -	<i>t</i> -		<i>d</i> -
<i>m</i> - (adj.; static intr.)	<i>m</i> -	<i>m</i> -					<i>m</i> -
<i>k</i> - (intr.)	<i>k</i> - (adj.)			<i>k</i> -		<i>k</i> - (adj.)	<i>g</i> -
<i>p</i> - (tr.)				<i>p</i> -			

CONCLUSION: FURTHER VISTAS

On the basis of the evidence reviewed in the preceding pages it seems difficult to avoid the conclusion that Subtiaba is a Hokan (or "Hokan-Coahuiltecan") language and that, as such, it is genetically related to widely different languages spoken far to the north (e. g. Shasta, in northern California) and to the northeast (e. g. Tonkawa and Karankawa, on the Texas coast). This evidence is lexical, phonological, and, above all, morphological. The typical form of stem in Subtiaba is of a recognized Hokan pattern; the alternation of forms with and without initial vowel is characteristically Hokan. The old system of Hokan nominal, adjectival, and verbal consonantal prefixes, defining the most fundamental classificatory notions, had begun to emerge before the present study of Subtiaba was undertaken, but the new evidence brought by this remote language of Nicaragua and southern Mexico has clarified the picture appreciably. Much, of course, remains obscure and in many directions there is everything to be done.

But can we stop with Subtiaba? In a previous communication²⁰ I ventured to suggest that one of the major groups of American Indian languages is a large group extending east and west from the Atlantic to the Pacific. The name "Hokan-Siouan" was suggested for these languages. A tentative genetic scheme might be thus represented:

A. Hokan-Coahuiltecan

I. Hokan proper

1. Northern Hokan

a. Karok; Chimariko; Shasta-Achomawi

b. Yana

c. Pomo

2. Washo

3. Esselen; Yuman

4. Salinan; Chumash; Seri

5. Chontal

II. Subtiaba (and Tlappanec)

III. Coahuiltecan: Tonkawa; Coahuilteco-Cotoname-Comecrudo; Karankawa

²⁰ *A Bird's-eye View of American Languages north of Mexico*, Science, n. s., vol. LIV, 1921, p. 408.

- B. Yuki
- C. Keres
- D. Atakapa-Tunica-Chitimacha
- E. Iroquois-Caddoan
- F. Eastern group
 - I. Natchez-Muskogian; Timucua
 - II. Siouan
 - III. Yuchi

Such a scheme must not be taken too literally. It is offered merely as a first step towards defining the issue, and it goes without saying that the status of several of these languages may have to be entirely restated. Thus, Yuki is listed for the time being as coordinate with Hokan-Coahuiltecan, but it is not unlikely that it is really a specialized Hokan language which has undergone a great deal of phonetic decay and has been rather seriously influenced by contact with neighboring Penutian languages (Miwok and Wintun).

The evidence for this "Hokan-Siouan" construction is naturally morphological rather than lexical, though the lexical bonds that unite Natchez-Muskogian and Hokan, for instance, are by no means negligible. This evidence will be given in due time. It is of a general rather than specific nature, though specific elements constantly enter into the argument, and can hardly receive its due weight unless one contrasts the underlying "Hokan-Siouan" features with the markedly different structures that we encounter in Eskimo-Aleut, in Nadene, in Algonkin-Wakashan, and in Penutian.²¹ There is now reason to believe that some of the more archaic elements and classes of elements that are found in Hokan-Coahuiltecan also exist as survivals in languages spoken far to the east. Some very suggestive evidence has recently come to hand, for instance, which seems to indicate that Natchez and the Muskogian languages originally possessed a system of consonantal prefixes analogous to the old Hokan system that we have discussed. Thus, Choctaw *laⁿsa* "scar": *miⁿsa* "to be scarred" is curiously reminiscent of such alternations as Subtiaba *d-aca-* "grass": *m-a'ca* "to be green" and suggests an old nominal prefix *l-* (cf.

²¹ The grammatical peculiarities of Uto-Aztekan are not so clearly differentiated from those of "Hokan-Siouan."

Chontal?) and an adjectival or intransitive *m*- (as in Yana, Pomo, and Subtiaba); for the latter element the evidence is already respectable. A surprising number of other consonantal alternations have been found in Muskogian and they present an important historical problem.

The example of Subtiaba is sufficient warning of the impossibility of drawing a preconceived boundary to the south. There is no reason whatever to believe that the "Hokan-Siouan" group as already defined will remain without further adjuncts in Mexico and Central America or perhaps even beyond. The addition of the Mayan languages seems rather more than less likely. To mention such possibilities is to make it clear that the real problems of American Indian linguistics have hardly been stated, let alone studied.

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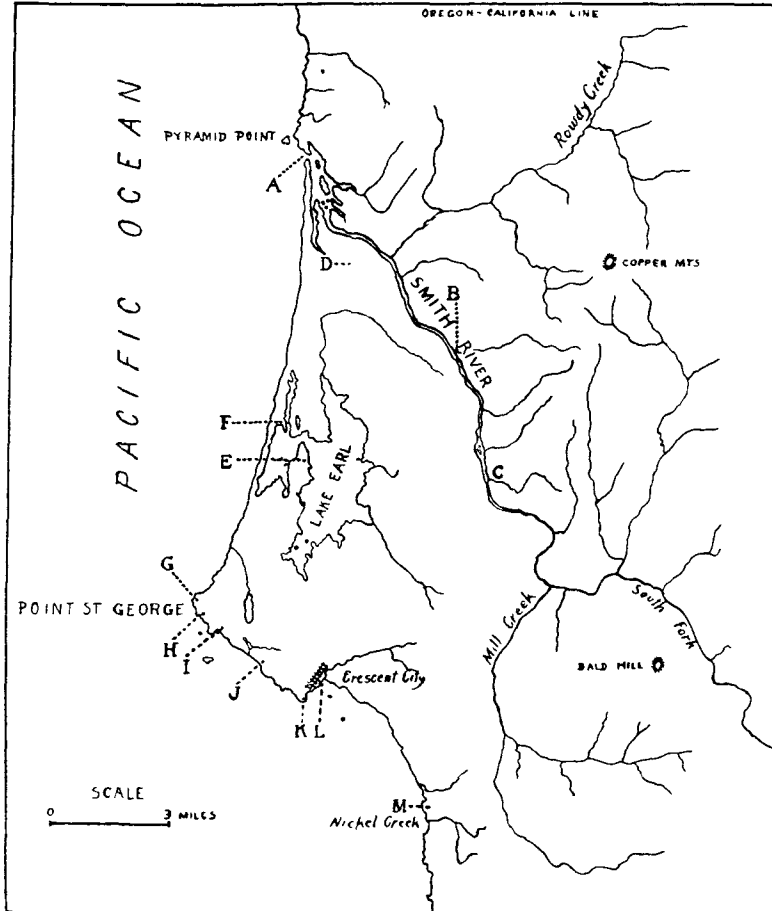
THE VILLAGE SITES IN TOLOWA AND NEIGHBORING AREAS IN NORTHWESTERN CALIFORNIA

By T. T. WATERMAN

IN THE year 1909 Dr. Kroeber dispatched me to Northern California to look into the native life existing among the Yurok. The fruits of my brief labors there have appeared in part in print, though one paper, "Yurok Culture," is still in storage in the Museum of the American Indian, Heye Foundation, New York. It contains the only detailed account of the northwestern California house. In the intervals of my business with the Yurok I used to look across the bay to distant Point St. George, dim, romantic and far away, and my soul took fire to wander thither and work with the Tolowa. Mr. Heye, to whose institution I committed my fortunes in 1921, actually sent me to the Tolowa territory to collect specimens for him, and accordingly during a month of that summer I lived in Crescent City, carrying out, at my own expense, some investigations on local ethnology. So little has been said about the Tolowa, that an essay on their habitat may interest the readers of the *Anthropologist*. They are an unusually interesting group, to me, very different in some respects from the Yurok.

Everyone, I think, is familiar with the fact that a somewhat peculiar way of living characterizes the northwest California tribes. Native life changes quite rapidly as one goes northward into Oregon. The Yurok, the Hupa, and the Karok have a somewhat highly specialized "house complex." For example, among the Yurok every house has a name. The Tolowa to the north of them have apparently no names for houses. In fact, when we leave the Yurok we have to pass almost to Alaska before we again find the custom of naming dwellings. There is, in fact, quite a sharp line both in this and in other matters between the Yurok and the Tolowa, although they live together on one stretch of coast. The Tolowa maintained close contact by trail over the mountains with the Karok, more so than they did with the Yurok who lived within view of them on the beach. "Money" made of *dentatium*

shell which is an important feature of native life in Northwestern California, came to the Tolowa from Vancouver Island, was traded by them to the Karok, and then passed by the Karok to the Yurok. We may, however, pass by the whole matter of



Map illustrating the territory of the Tolowa Indians in northwestern California. Adapted from the United States Coast and Geodetic Survey, Chart 5702.

cultural relations, with the remark that when we go from the Yurok northward to the Tolowa we pass rapidly out of a highly developed California culture into the much more primitive culture of Oregon. Why the Tolowa and the Oregon tribes are more

simple in their way of living I confess I do not know. The life of the Yurok exhibits many analogues with that of the distant Kwakiutl and Haida far to the north (and other North Pacific tribes). The "high" culture level is encountered in California but seems to vault over the Oregon coast tribes, reappearing and reaching a very high pinnacle in distant British Columbia and Alaska. This seems to imply some sort of a degeneration of culture among the Oregon tribes, for the high culture of California and Alaska must at one time have been continuous. A curious thing this is, and needs some sort of explanation.

Some years ago I became infected with a geographical bacillus and so when I arrived among the Tolowa in 1921 the matter which first claimed my attention was local geography. Several investigators had worked more or less with the region before I got there; Sapir, Goddard, Gifford, and especially J. O. Dorsey, who left some valuable geographical notes. The best account of Tolowa life is that of Stephen Powers. In fact, his is the only account accessible.¹

The point of most interest for readers of the *Anthropologist* is perhaps the location of the Tolowa villages. I give herewith a list compiled with the help of native informants, adding for comparison the terms supplied in Dorsey's work and the names applied to these villages by the Yurok.

Comment. The "receptacle" mentioned in table I, under B, is a cooking-basket, made in a water-tight weave. The English term "*Bucket ranch*" is an approximate translation of the Indian name. Yontucket (D) the name of a village appearing on the local maps is a somewhat Anglicized pronunciation of the native name. Lake *Earl* of our maps is either a transliteration of the Yurok *ErL*, or Yurok *ErL* is the Yurok pronunciation of English *Earl*. The former seems to be the case. Tolowa *Tayjia'te*, "pointing sea-

¹ E. Sapir, Notes on the Takelma Indians of Southwestern Oregon, *American Anthropologist*, n. s., vol. 9, 1907; Takelma Texts, in *University of Pennsylvania Anthropological Publications*, vol. 2, 1909; J. O. Dorsey, The Gentile System of the Siletz Tribes, *Journal of American Folklore*, vol. 1, 1888; Stephen Powers, *Tribes of California*, U. S. Interior Department, Contributions to North American Ethnology, vol. 3.

I. NAMES OF THE TOLOWA VILLAGES

<i>English Names for the villages</i>		<i>Names in the Tolowa language</i>		<i>Names in the Yurok language</i>	
		<i>xawinwet</i>		<i>Hi'nei</i>	
A	<i>Siesta Peak ranch</i> ² at the mouth of Smith River.	xatsa ³ —xotδ'tne, "receptacle below"		Mi'suks	
B	<i>Bucket ranch</i> , in the cañon of Smith River	MinitcE'nten, "close to the hill"		Lδ'genδL, "where a fish-dam is customarily."	
C	Site up-stream from the last named on Smith River	Yδ ⁿ -t'akit, "east, high in the"		Tola'k ^w	
D	<i>Yonibucket ranch</i>				
E	A suburb of the above named town				
F	<i>Lake Earl Ranch</i>	E'tculet, "land great upon"		ErL	
G	<i>Point St. George ranch</i>	Tayt'a'te, "pointing seaward"		Knä'awi, "extended"	
H	<i>Saddle Rock ranch</i>	Sa ³ staso ⁿ , "spoon-holder"		
I		Tatj ⁿ 'tr ⁿ ,		A'tägen'	
J	<i>Pebble Beach ranch</i>	Mεsteln,		Cä'coi	
K	<i>Crescent City ranch</i>	Sε: nñ hat, "rock flat"		Kδhpe	
L	Another village just inside the promontory at Crescent City	Tata'ten, "in-a-corner place"			
M	<i>Nickel Creek ranch</i>	Cinya'titci		Nekε'L, "end of beach"	
N	<i>South Fork ranch</i>	Nεmsδ'ten, "houses there"		

² Meaning "Indian village"; from the Spanish *ranchería*, meaning ranch buildings, offices and employees' quarters, the abode, literally, of the *ranchero*, or owner. The vaqueros and other minor functionaries were mostly Indians in the old days, and I presume *ranchería* thus came to signify an Indian settlement.

II. LIST OF YUOK TOWNS, WITH NAMES APPLIED TO THEM BY THE TOLOWA

<i>Yuok names</i>		<i>Tolowa names</i>	
aiqo' 'o,	"basket"	.....
otsepó'r	"where it is steep"	.....
lo'ole'go	"where fish-weir they build"	.....
oslego'its	"where it descends"	.....
Osmemo'RL	"where it slides"		
weitspūs	"confluence"	Itcoilín'ten	"confluence place"
pek'wutul	"pile of rocks"	kwē'setesa'wit	"middle ridge"
rlgr'	.....	t'oñcen-mq'itun,	"myrtles, at end of something"
wa'hsek	.....	xaitutuciten	"naming-is-forbidden place"
qe'nek	.....	to'niten,	"tearing place"; or ce-Icin, "black
		rock"	
tse'tskwi		.....
qe'nek-pul,	"down-stream from qe'nek"	.....
aukweya'	.....	.....
me'rip	.....	.....
wa'ase	"poor"	nocusne'Lten	"throwing in hearts"
ke'pal	"house-pit"	Esta'kt,	"fish weir"
sa'a	.....	.....
murek	"cooking basket" (?)	nonia'ten	"end of a ridge"
himeL		.....
wé'qem		.....
no'xtskum		cq-tc'awi'sten,	" foaming place"
ke'peror		.....

ward," for Point St. George ranch, and the corresponding Yurok name *knä'äwi*, "extended," are both fairly descriptive of the site, which lay on the side of the promontory. Saddle Rock ranch (H) gets its Tolowa name "spoon-holder," as it got its English name Saddle Rock, from the shape of a bold headland, visible for miles, and almost entirely surrounded by the sea. An artificial excavation in its summit serves as protection from the wind. Girls used to go and sit there when they wanted to obtain supernatural help, meanwhile working at basketry. The English expression "Nickel Creek" (M) is a transliteration of the Yurok *neké'l*, "end of the beach." None of the Tolowa towns were of any great size, even as compared with the Yurok settlements. The promontory, on which the Tolowa mainly lived, is a wind-blown and, to me, romantic spot, but did not offer a great deal in the way of subsistence.

Elsewhere I have published³ a list of Yurok towns. The Tolowa terms for these Yurok settlements offer some points of interest.

Comment. The Tolowa name for Stowen in table II of towns refers to a mythical incident. Someone had a lot of human hearts. He piled them up and weighted them down with rocks. He could not hold them down. Then he put them in the river. They would not stay down. The fact that these hearts would not "stay put" is the reason why people today all think differently. Of the other town-names many are self-explanatory. A few are direct paraphrases of the Yurok names. For example, *Weitchpec* (or *Weitspus*) means "confluence" in Yurok, just as *Ltcoilín'ten* does in Tolowa, and the place known as Big Lagoon, in Yurok *Okéto*, "where the water is calm," is called by the Tolowa "smooth water." In most cases, the Tolowa names are directly descriptive. The place now known as Trinidad is called by the Yurok "mountain," because the cape there is an isolated conical knoll of rock connected by a low isthmus to the mainland. From a distance the knoll seems to stand by itself. The place is called by the Tolowa "calm ocean," referring to the still water of the harbor behind the cape.

³ *Yurok Geography*, University of California Publications in American Archaeology and Ethnology, vol. 16, 1920.

NAMES OF PLACES OTHER THAN TOWNS

Footsteps Rocks, north of Wilson Creek, *taʔene-ni'ten*, "going-into-water place." Women were compelled to disembark, on approaching these rocks and to pass them on the inland side, over the trail.

False Klamath Rock (Yurok *rlgr*), *wetc' atagasni*, "digging something." People used to go here to dig up edible roots, called locally "Indian potatoes." Berries were gathered here, too.

A place called by the Yurok *tahto'* sits, on the Lockwood place, where the trail to Requa from Wilson Creek climbs on top of a high hill, *tca'yatlil*, "wind taking off one's clothes." Legend says that the wind blew so hard here once, that it blew a woman's dress off.

A ceremonial rock at Requa (called in Yurok Orego's, "where they customarily land") *yaasti'kwet*, "do not touch with a pole." A supernatural being lived in this rock.

The landing-place at Requa village (called in Yurok *otse'gep*, "where they customarily disembark") *sixatxe'sten*, "disembarking place."

The principal mountain peaks in Tolowa territory follow:

1. The northern peak of what are called "*Copper Mountains*" on our maps, *E'tlkwaket*, "resin on top."

2. An elevation entered on our maps as "*Bald Hill*," now known as Murphy's ranch, *Men-t' u'tem*, "bare mountain." The Tolowa went thither every spring to pick acorns.

3. A row of peaks called on our maps "*Four Brothers*," in Tolowa *Nee xotinl̥t̥e*, "*four sisters*."

4. An elevation called by the whites "*Bear Mountain*" (otherwise known as French Hill), *A'n-towai*, "hill big." This is a famous spot in Tolowa mythology.

5. A hill shown on our maps as Preston Peak, called in Tolowa *GEtLgi'st-hu*, "kelp . . ." There is said to be a lake at the summit *with kelp in it*, showing a connection between the lake and the ocean. I should like to have a dollar for every such lake that has been pointed out to me by Pacific Coast Indians.

GEOGRAPHICAL IDEAS

The description elsewhere given (in the author's paper already cited) concerning the geographical ideas of the Yurok applies rather closely to the Tolowa. They have a similar notion concerning the nearness of the sky, which is thought to be a solid

III. NAMES FOR NATIVE GROUPS

<i>English</i>	<i>Yurok</i>	<i>Tolowa</i>
Hupa	Hupa-lä	Kw'a'ista, "behind sitting"
Takelma ("Waldo Indians")	...	Kqstl.δt'ε'ni
Karok	Ko'omets	Tc'o'ne (applied also to the Shasta)
Chilula	Tsulula'i (Tsulu "Bald Hills")	K'ontsi'ne, "tattooed all over the face"; also called Kw'aie xaiti
Wiyot (or Wishosh)	We'yot	"staying on top of the hills"
Yurok	...	Weya'teni
"White people" (Americans)	Wôye, "immortals"	Te'limis; also Tatcita'ni,
Eel River Athabascans		"Klamath people"
Rogue River Athabascans	...	Natlmí'ni
(north of the Oregon line)		Tcwata'γnli, "big river people"
Illinois River people	...	Taxo'-xeci, "north people"
		TLocle'be

vault. Their land of the dead which they call *Ta'ni'ta'hon*, lies, however, across the ocean to the westward, while for the Yurok the land of the dead is underground. In order to get to the village inhabited by the dead souls, according to the notion of the Tolowa, one crosses a river in a boat which has only one side. If the dead people are not willing for the newcomer to join them, they refuse to ferry him over. In that case, the newcomer is obliged to come back to this world; that is, he "comes to life." It is noticeable that the Tolowa, like the Yurok, have few if any names for streams. They describe a watercourse by calling it the stream which flows by such and such a spot. As was found to be the case with the Yurok, the geographical names group themselves very conspicuously along the shores. Very few names are found inland.

My Tolowa informants who lived at Crescent City, in the present town, spoke of themselves as *Tata'tEn-xEcli*, "in-a-corner-place people" from the old village site *Tata'tEn*, inside of Battery Point there. The native names for the various groups in the nearby region are given in table III:

The exact location of the frontier between the groups, particularly the Takelma and Chasta Costa, is a matter that has been somewhat violently mooted. The two principal authorities are J. O. Dorsey and Sapir. The matter is rehearsed rather carefully by the latter author, in the papers already cited.

The problem over which these authorities labor rises from the fact that J. O. Dorsey succeeded in recording Athapascan names for the Takelma villages. Dorsey explains this by devising a theory that certain Athapascan groups invaded the territory of the Takelma, and imposed a series of names in an Athapascan tongue on the enemy settlements. Sapir feels sure that Dorsey is wrong; that the latter's Athapascan informants merely clothed the names in an Athapascan garment in place of giving them properly. Meanwhile, it is a positive fact that every group in this region has a series of names in its own tongue, for all the towns and other important places, in the territory of each of the neighboring tribes. Thus the Yurok have their own Yurok names for the Hupa towns, and vice versa; and the matter is also illustrated in the list above. For that matter, this custom is per-

fectly well known in other regions: the Zuñi, for example, having their own names for each of the Hopi villages. It can be expected *a priori* that any Athapascan group in California will give Athapascan names for any series of towns which they are acquainted with.

The boundaries or frontiers between the Oregon groups were worked out by me, with more or less accuracy, on a map, which represents a judicious compromise between the positive but contradictory statements of Dorsey and Sapir, and my own data collected on the spot.

The location of the Tolowa frontiers is a somewhat simpler matter. Their northern boundary was practically the Oregon-California line. They extended down the coast as far as Cushion Creek, where they met the Yurok. Two small towns on or near the boundary had a population of about half Tolowa and half Yurok. Inland, the Tolowa were separated by ranges of mountains from the Takelma, with whom they had little contact, excepting occasional raids back and forth. Well-travelled trails led over the ridges to the upper portion of the Klamath River, inhabited by the Karok, with whom the Tolowa had constant dealings. North of the Tolowa are the Chetco, speaking a slightly divergent dialect north of them the Pistol River people, with a dialect still more divergent, and north of these the people of Rogue River. The culture of the latter is vastly different from that of northern California. On the Rogue River the women wore a skirt of shredded bark in place of the buckskin dress, fringed, tasselled, and ornamented with shells, worn by Yurok women.

NAMES OF THE ATHAPASCAN VILLAGES IN OREGON

During the jaunt into Athapascan ethnography just described, I made a survey of geographical names, as best I could, northward past Chetko River, Pistol River, and Rogue River, to Port Orford, Oregon. Work of this sort is difficult in this region. There was a Rogue River "war" and all these Indians were cleaned out by troops and taken to Grande Ronde and Siletz reservations in northern Oregon. Information can therefore be gotten only piecemeal. Two investigators preceded me in this

field, J. O. Dorsey and Paul Schumacher. Dorsey mentions having made for the Bureau of Ethnology a map showing several hundred villages in this region, his information being based largely on inquiry made at Siletz. During a brief appointment with the Bureau in 1922, and afterward, I tried to get a view of this map, but Dr. Fewkes reported that the Bureau knew nothing of it. However, it is to be hoped that this exceedingly important available document may yet be brought to light. In the meantime, Dorsey's paper in the *Folk Lore Journal* remains the most important source of information concerning the Oregon tribes.

Some of his geographical names correspond with those recorded by myself at a much later time, and the two lists confirm each other in many ways. I obtained translations of some names which he leaves untranslated. After going over the country, it seems to my mind that a large number of the names he supplies are not after all the names of villages. At any rate, the number of villages located by me is very much smaller than the number listed in Dorsey's article. His list is certainly inordinately long. In regard to some particular cases, I know that he is mistaken, for he describes places as villages which were not places of settlement at all. On the other hand, it must be admitted that he worked forty years before I did, and inquiries were much easier to make in his day.

NAMES OF THE OREGON ATHAPASCAN VILLAGES

Old village-site at the mouth of Sixes River seven miles north of the location of the town of Port Orford, Kusúme.

A village-site north of Euchre Creek, Gwesa' L-henten, "mussels good there."

An old village-site north of the mouth of Rogue River, Tce'me, "ocean in"; marked by a fairly extensive shell-mound on the tip of the promontory at the northern side of the river, at its mouth (fig. 4). (Dorsey, p. 233, No. 10, Tce-me, "people of the ocean coast.")

An old and important village near the mouth of the Rogue River, on the north bank, Tu'tu-ten, "lagoon place." (Dorsey, p. 233, No. 13 Lu'-tu, "people close to the water").

A village-site close to the preceding, Na'get-xe'ten, not translated.

A very important old village-site, about 12 miles up Rogue River, Mġkwano'tEN, "white clover place." This site was known after the coming of the whites as *McGuire's*. The element ml- is said to mean "on one's back" (Dorsey, p. 233, No. 16, Mi'-ko-no'ġunnġ "people among the *white clover roots*.")

A village-site opposite that just mentioned, gWESE'tEN, "yew place." This native term has been corrupted into *Quosatana Creek*, which appears on the modern maps. (Dorsey, p. 233, No. 18, Kwus-setun.)

A village-site on the north side of the river, near a big rock, on a point of land, in a bend of the river, Se-Lxa't:EN, "rock slippery." This rock was once, in the Indian belief, a person. On the face of this rock, near the river, are some petroglyphs, covered with patches of moss. This is the site of the present town of *Agness*, spelled with a double *s*. (Dorsey, p. 233, end of paragraph Ģġcl-qġt ġun'nġ "people at the smooth rock.")

A village-site in the point of land between two streams, where the Illinois River joins Rogue River, tLe'ġET-tLġTEN, "confluence flows." (Dorsey, p. 233, bottom, KĢe-lġt li'ġunne, "*people at the forks*")

A village-site on the south bank of Rogue River above the mouth of Chasta Costa Creek, YETci'WET or Tatci'kwET, "tail-feathers upon." There is a flat and fanshaped point of land, inclosed between the creek and the river which suggests the tail of a bird. (Dorsey, p. 234, No. 1, Ta-tci'-qWġt, "*Plateau people*") His translation is a hasty approximation of the one I obtained.)

A village-site at a place in Rogue River now known as Big Bend, Se-ġLtġnitcu or Se-ġLTEN, "Rock among large" also translated "rocks where one lands a boat." The river here comes tumbling through enormous boulders. Boats could not pass above this point. Beyond this lay the territory of the Takelma (Dorsey, p. 233, bottom, Se-ecl unne, "*People using salmon weirs*").

An ancient village-site on the promontory west of the present settlement at Gold Beach, Na'ġET-xe'tEN, not translated. Dorsey locates a village here which he calls skġ-mġ-me. This latter is the name for Hunter's Creek in my notes.

Village-site under a promontory on the north side of the mouth of Pistol River, Tġtle's-tġTEN, "crag under." There is a large shell-heap here, examined by Schumacher in 1899 and mapped by him. The crag is sometimes called Eagle Rock.

A village-site at the first bend as one ascends Pistol River, Aġ ene'tEN.

Old village-site at Crook Point, E:nasET, "Land in front."

An old village-site at the mouth of Thomas Creek, Xustene'tEN, "gravel place." This word appears in the books in the anglicized forms *Hustenate*, *Wishtanatan*, and *Whistle-latin*.

A village-site inward from a great sea-crag, at the mouth of Whalehead Creek, XainEñgi'nte'tEN "people all departed." This settlement had another name originally, but I do not know what it was.

An important village-site south of Cape Ferrelo, Naltene'ten. The element *tene* means "trail-place."

An old village-site lying in the first cove north of Chetco River, K'alu'-kwet, "baby basket upon." This was the most important village in the Chetco area.

An old village-site at the mouth of Chetco River, Na'get-xe'tEN, not translated.

A village-site on the east bank of Chetco River, T'acų-tan-cutle'tEN, "pepperwood nuts drifting in under something."

Another village, directly across (west) from the preceding, Çlç-kas-li'tEN, "clay goes-up where." The village was on a little plateau, bounded by a clay bank.

A third village close by the other two, between the forks of the main stream, Tune'sTEN, not translated.

A village-site at the mouth of Chetco River, on the south side, Tci'txo. This term is said to be connected with the word for the tail of a bird. A village on Rogue River has a similar name. This native term has given rise to the modern name of the river, *Chetco*.

An old site, said to have been inhabited at one time, on a rock on the mouth of Winchuck River, k'osą' tən-icut-s'a, "right at ocean there."

The old village at the mouth of Winchuck River, KəsəTEN, "evening" This is a "bad" name, for mentioning the word "evening" is likely to shorten the day. For this reason, this village was often spoken of as Tusxo'tsitu, "do not mention it." It lay on the promontory south of the mouth of Winchuck River.

The following additional names appearing on the modern maps of this region are of Indian origin, and may have some interest.

Quostana Creek, (gwese'tEN, "yew place"; Dorsey: Kwus-se'tūn, not translated).

Sixes River, native term Sekwe'tce, not translated.

Euchre Creek, native term Yu'kwi, "mouth of a stream."

Joshua Indians, a borrowing of the native term Yɔcutci'-teγɔne', "River-mouth north," the old name of the point at the north side of the mouth of Rogue River.

Emah Creek, in the Chetco language, Eme'xu-tcet, Mt. "Emily stream."

Mt. Emily. The native term is An-mai, "earth undulating." I think that "Emily" is the native word in Anglicized form. It is the scene of an important flood myth.

Tones are very plainly heard in Tolowa words. I am sorry I cannot give an account of them. They are particularly conspicuous on account of the contrast with Yurok. It is curious to observe that these adjacent languages show the two contrasting phonetic types, Yurok with vowel-harmony, Tolowa with tones. I think it more than likely that all the tone languages of America are related. A man possessing accurate knowledge like J. P. Harrington, of numerous dialects, could easily settle the matter if someone would put him at it. The languages showing vowel harmony I would also suspect to be related among themselves. In view of the well-known migration of cultures and myths from Asia, I see no reason why a little independent study should not show the vowel-harmony languages to be related to Mongol-Turkish and the tone languages to Chinese. The evidence connecting Yurok with Mongol seems about as good as that on which Powell established his famous and sacred classification of fifty-five stocks. The recording of American languages has been phonetically inadequate; otherwise I think the broad relationships would have been observed long ago.

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MAYA INSCRIPTIONS: FURTHER NOTES ON THE SUPPLEMENTARY SERIES

By JOHN E. TEEPLE

IN A previous article¹ I was able to show the method of reading and the meaning of Glyphs C, D and E of the Supplementary Series. Glyph D shows the number of days that had elapsed since the last point of observation of the moon (presumably the new moon) provided the days are less than 20; Glyph E records the days in case they are 20 or more, E itself representing 20; Glyph C records the number of complete lunations in addition that had elapsed since the end of the last moon group (of 5 or 6 lunations). Ample proof was presented in the case of Glyphs D and E, but in the case of C we have only some examples, and the inference of extreme probability, but no actual proof. I think, however, that we can tentatively accept the reading of Glyph C also with perfect safety.

The next step was to apply the above readings to various inscriptions and see what could be developed. First, did the Maya exhibit the meticulous accuracy that some writers would have us believe? I think not. Stela 12 at Copan states that the date 9.10.15.0.0 occurred 3 days after a new moon, while Stela 13 Copan gives 9.11.0.0.0 as 5 days after a new moon. It is hardly likely that both statements are correct. If the last date was 5 days after a new moon then the first was probably 6 days after instead of 3 days.

More definitely, take date 9.16.5.0.0 which Stela J at Quirigua says occurred 4 days after a new moon. Stela M at Copan gives the same date as 5 days after a new moon.

Again, 9.16.10.0.0 is given by Stela N at Copan as 1 day and by Stela 1 at Yaxchilan as 3 days after a new moon. Stelae 24 and 29 at Naranjo give the date 9.12.10.5.12, respectively, as 18 and as 19 days after new moon. Stela J at Copan and 4 at Piedras Negras

¹ American Anthropologist, 1925, pp. 108-115.

give 9.13.10.0.0 in one case as 18 days and in the other as 20 days after new moon.

These discrepancies are not large, only 2 or 3 days at most, but they serve to show that absolute accuracy to a day is too much to expect from a people in their state of development and with their means of recording and filing data. We may assume that they could observe the new moon accurately enough, but a 2 or 3 day inaccuracy in their calendar count was not uncommon, and in fact is exactly what we should expect. I think we may safely assume too that they had means of checking the calendar count at frequent intervals, by observation and computation, so that except in times of war or great public disturbance the calendar variation rarely exceeded a couple of days.

The age of the moon in days seems to have been a matter of considerable interest and importance to the Maya for we find several references in the inscriptions to moons of the same age. For example, Stela 3 at Piedras Negras reads in part

"9.12.2.0.16.5 Cib 14 Yaxkin, 27 days after the second lunation after the end of a moon group, is the same moon day as katun 12."

Now Katun 12 is shown by Stela 37 at Piedras Negras (courtesy of Dr. Sylvanus G. Morley) to be 28 days after new moon. We assume that the former date represents 27 days of a 29 day month and the latter 28 days of a 30 day month, i.e. the moon was the same age in both cases. We read further on Stela 3 above

"12.10.0 (from 5 Cib 14 Yaxkin) is 1 Cib 14 Kankin, also the same moon day as Katun 12; 1.1.11.10 (after 1 Cib) is 4 cimi 14 Uo."

Here a statement is made about the moon day which I cannot yet read, but the inscription no longer states that it is the same moon day as Katun 12 because at this point we are about 6 days short of that age. No moon days appear in the rest of the inscription and no others are reached by the dates.

Stela I at Copan is another interesting one. It reads in part

"9.12.3.14.0 5 Ahau (8 Uo) is a new moon day 4 lunations after the close of the last moon group. 10 Ahau 13 Chen (9.12.7.4.0) is also a new moon day the same as Katun 12 (or Katun 6) was. 10.8 (from 10 Ahau) is 10 Lamat (16 Pop 9.12.7.14.8)."

The rest is obliterated or I think we should find it explained that 10 Lamat was also a new moon day. Apparently according to the Copan calendar the end of Katun 12 (or 6) was a new moon day. We saw above that according to the Piedras Negras calendar the new moon did not come till a day or two later than Katun 12. 9.12.16.7.8. 3 Lamat 6 Yax on Altar K at Copan is the only other initial series date so far found in the inscriptions, with the exception of two or three hotun endings, which occurred on a new moon day. Consequently these two dates 9.12.3.14.0 and 9.12.16.7.8 with two or three hotun ending dates in addition are the only initial series dates among more than a hundred known ones which could possibly have commemorated an eclipse of the sun. From the position of these two dates in the Tzolkin however, day 200 and day 68 respectively, it does not seem probable that an eclipse occurred on either date. Nor is it probable for the same reason that any initial series date represents an eclipse of the moon although several of these dates occur 14 or 15 days after a new moon.

The Maya Tzolkin becomes a beautiful instrument for following eclipse dates if we have any fixed starting point, and I think we have one in Dresden Codex pages 51-58. Taking the table as finally worked out by Prof. Willson and Dr. Guthe, the zero day is 11 Manik, day 167 of the Tzolkin; the first group of 6 moons ends at 6 Kan, day 84 of the second Tzolkin, or day 344 if we number consecutively through a pair of Tzolkins; Group 2 ends at 1 Imix, day 1 of the third Tzolkin, then follow in order days 149, 326, 503, 161, 338, 515, etc. If we plot them all we find the whole 69 dates falling into 3 groups. The first group of 23 dates (or 24 if we include the zero date) lie between days 149 and 183, and center around day 166; the second group of 23 dates lie between 322 and 353 and center around day 339; and the third group between day 496 and day 10 of the next Tzolkin and center around day 513. Now if we are right in assuming that this table in the Dresden Codex represents a possible eclipse calendar, then days 166, 339, and 513 of the Tzolkin must be the days when the sun passed the moon's nodes, and at the date of the calendar no eclipse either solar or lunar could have occurred except within

an extreme limit of 18 days on either side of day 166, 339, or 513. Lunar eclipses would of course be within the narrower limit of 13 days.

This agreement between eclipse seasons and Tzolkin becomes easily understandable when we remember that the average eclipse half year is 173.31 days, and that 3 such periods require 519.93 days, just .07 day less than 2 Tzolkins. The discrepancy between average eclipse periods and Tzolkin then is slightly less than one day per katun. If day 166 of the first Tzolkin was the day when the sun passed the moon's nodes around 9.16.0.0.0, then about 9.17.0.0.0 the sun would pass the node on day 165 for a katun, and at 9.18.0.0.0 days 164, 337 and 511 would be the node days. In the other direction no date near, say, 9.11.0.0.0 could possibly be an eclipse day unless (a) it was within 18 days of day 171, 344 or 518 for a solar eclipse or within 13 days for a lunar eclipse; and (b) it was on a new moon day for solar eclipse or 15 days before or after new moon for lunar eclipse. This rather definitely narrows the field and may possibly lead to the identification of some secondary series date as the record of an eclipse and so give another aid to the correlation of the Maya and Christian calendars.

We know from two monuments (Stela M Copan and Stela J Quirigua) that a new moon occurred on 9.16.4.10.8 or within one day of it, and Stela M also shows a moon group ending at 11 Manik 9.16.4.10.7. It seems altogether probable that 9.16.4.10.8 was the zero day or beginning day of the table in Dresden Codex. All three of the correlations discussed by Prof. Willson² are partly based on an eclipse Syzygy at 9.16.4.10.8 and this seems a necessary condition of any final correlation; of course it is not a sufficient condition. On the other hand a correlation such as that so carefully worked out by Dr. Spinden³ which places the date 9.16.4.10.8 on a day where there is no ecliptic conjunction within 40 days and not even a new moon within about 10 days cannot possibly be correct to a day.

The arrangement of the moons in groups of 5 and 6, to end on possible eclipse dates as shown in the Dresden Codex was appar-

² *Astronomical Notes on the Maya Codices.* 1924.

³ *The Reduction of Maya Dates.* 1924.

ently a recent discovery. Throughout the inscriptions the moons are arranged in groups of 5 and 6, but the five groups are apparently about as numerous as the six groups, and in the inscriptions there is no apparent attempt to have the moon groups coincide with the eclipse seasons. In the inscriptions moon groups end promiscuously on almost any day of the Tzolkin instead of hovering near days 166, 339 and 513, as they do in Dresden Codex. Only in two cities, at one particular time do we find any series of monuments following the Dresden Codex Table. This is at Copan where the four latest initial series (Stelae D, M and N and Temple 11, 9.15.5.0.0 to 9.16.12.5.17) all conform fully to the Dresden Codex method, and at Naranjo where also the four latest ones (Stelae 30, 13, 14 and 8, 9.14.3.0.0 to 9.18.10.0.0) conform fully. This is hardly sufficient evidence to link the Dresden Codex with Naranjo or Copan, but it is the only indication that I have been able to find so far. The method of the Codex was not in use in Naranjo in 9.13.18.4.18 (Stela 23) nor at Copan in 9.14.19.8.0 (Stela A), but every later legible series in both cities conforms closely with the Dresden Table. What method of grouping the moons was followed in these two cities before the dates given, or in other cities like Quirigua, Piedras Negras, Yaxchilan, Palenque, etc., at all times has so far eluded me entirely. Alternate arrangement of a five and a six, or two fives and two sixes, or six fives and five sixes are all indicated, but indications derived from any one group of monuments fail completely when applied to another series of inscriptions.

In addition to the period 1.13.4.0 which apparently was in use before its adjustment to eclipses according to the Dresden Table, the Maya had a number of other convenient approximations for computing a new moon day; for example a tun and a Tzolkin 1.13.0 is a very close approximation to 21 lunations; five tuns and a kin 5.0.1 for 61 lunations; a katun and five kins 1.0.0.5 for 244 lunations. All these or multiples of them will be found in use in the inscriptions. The figure 11.11.13 written on a shield next to a moon ending sign on the inscribed stairway at Palenque (Maudsley 4, 23) is no doubt meant for a period of 142 lunations and is one third of a longer 426 lunation period 1.14.17.0, just

as 11.1.6 for 135 moons is one third of the longer Dresden Codex period 1.13.4.0 for 405 lunations.

SUMMARY

1. An error of 2 or 3 days in the Maya Calendar was not uncommon.

2. The age of the moon was a matter of interest and note.

3. It is probable that no initial series date is the date of an eclipse (Day 9.17.0.0.0 is the only possible exception so far found).

4. The Tzolkin is shown as a very suitable instrument for following eclipse seasons through years.

5. Moon and eclipse season data now known in Maya Calendar terms may be used to check any proposed correlation between Mayan and Christian chronology.

6. Thus far the Dresden Codex moon-eclipse Table has been found in use only at Naranjo and Copan, and there only after 9.14.0.0.0 to 9.15.0.0.0.

7. Since the Maya Calendar was not uncommonly subject to a 2 or 3 day discrepancy even in the time of the Great Empire, it seems too much to expect that it could have maintained accuracy during all the centuries of disturbance and decline that preceded the arrival of the Spaniards. This makes it seem very doubtful that any exact correlation of Mayan chronology with our own can be derived from the Mayan dates as they existed in the years after 1500 A. D.

8. Any correlation must account for a new moon on day 9.16.4.10.7 or the day after, and also, in all probability, for an ecliptic conjunction on that date within two days after the sun had passed the moon's node.

NEW YORK CITY.

THE METAL INDUSTRY OF THE AZTECS

By GEORGE BRINTON PHILLIPS

I

THE collections of many thousand copper objects, tools, weapons, and ornaments from ancient Indian burial mounds and village sites in the United States of North America is strong evidence in favor of a pre-Columbian copper industry with which the aborigines were familiar before they reached the Iron Age. Did this knowledge and use of copper extend into Mexico and adjacent country of Central America?

Prescott in his *Conquest of Mexico* gives a picturesque account of the splendors of the court of the Montezumas with its silver and gold ornaments and utensils, but the knowledge of metals does not seem to have extended to the general use of copper or bronze for tools and weapons. The Aztec in the production of ornaments in the precious metal showed great skill and artistic workmanship and specimens sent over to Spain were greatly admired by the Spanish goldsmiths. Owing to scarcity of copper in their immediate vicinity, the ancient Mexicans confined its use to adze blades, chisels and some copper objects, possibly ceremonial implements. The tools were hardened by hammering and used in wood carving. The stone cutting it is believed was still done with flint tools.

Copper was obtained from the mines of Zocotallan where it occurred in masses on the surface and also from the galleries opened in the rock. Ancient workings have been discovered at Cerro del Aguilar in Guerrero, and the Zapotec country was well known for its copper mines. Deposits of tin were also found in Guerrero at the mines of Tasco, and it is said that Cortez obtained enough tin from that source with the copper to cast several large cannon, which he used in his fortress at the siege of Mexico. This use of tin in making a suitable alloy it is believed was due to the familiarity the Spaniards had of bronze, rather than to Aztec knowledge of the art.

The Aztec people had, however, some knowledge of metallurgy, for they melted the copper and cast it in moulds, an art which the aborigines in the United States never seem to have acquired. Cortez tells us that in the markets of the City of Mexico

"hatchets were sold made of copper alloyed with tin and that this alloy was used with a silicious powder with which they cut the hardest stones."

The Spanish historians speak of Cholula, a very ancient City of Mexico, founded before the arrival of the Aztec, which excelled in metal working, and that the Tarascans living west of the valley of Mexico were familiar with copper found in the mountains in that district, which they worked into defensive armor, body plates of wood covered with sheet copper. They also state that the Zapotec made ornaments of copper obtained from the mines in Oaxaca.

Copper implements, however, were not common near the City of Mexico but were plentiful in Oaxaca, Michoacan, and the Jalisco region. The T-shaped implements were found at Mitla, Central America, being abundant in the Zapotec country. The objects, some made of very thin sheet copper, others heavier, possibly cast, are of uncertain use; those too thin to be used as tools for wood or stone, are thought to be instruments used in their feather work or pottery, others regard them as a money currency or exacted as tribute paid to the City of Mexico by the neighboring cities, this latter being the general opinion.

The number as well as the variety of copper objects from Mexico found in our Museum collections, is rather limited, consisting of a few copper ax heads, chisels, large and small, little bells, finger rings, beads and pins. The peculiar T-shaped objects are the most abundant, differing somewhat in shape and size. An analysis of one of them in the Peabody Museum at Cambridge, proved it to be simply copper. It was doubtful if the ancient Aztec had a knowledge of bronze or knew how to obtain it until shown by the Spanish invaders, and such analyses of Mexican metal objects, giving a percent of tin to indicate a true bronze, may have been implements made after the instruction by the Spaniards. Some copper tools from Mexico when analyzed showed a small amount of tin believed to have been an impurity in the

copper ore. A chisel reported in the "Anales del Museo de Mexico" quoted by Sir John Evans, in his *Ancient Mexican Implements* when analyzed gave copper 97.87%, tin 2.13%, not sufficient to make a true bronze. Copper axes from Oaxaca, some heavy metal, apparently cast in a mould, others thin, shaped from sheet copper, have been analyzed and yielded only copper, showing they were *not* bronze.

A recent analysis was made for the writer of a portion of a metal chisel of Aztec origin from the village of Acatlan, in the State of Guerrero, Mexico. It was doubtless authentic being sent by Dr. Manuel Gamio, Direccion Anthropologia, Mexico, for analysis, which was made by Dr. D. L. Wallace of the University of Pennsylvania, Analytical Department. The piece of metal apparently broken from the middle of the chisel weighed 88 gms. It was 30 mm. long, 20 mm. wide and 15 mm. thick. It had a brown patina of oxidation, gave clean metal borings (used in the analysis) of dark red bronze color, and had the appearance of having been cast in an open mould. The specific gravity of the metal was 8.00 compared with Lake Superior native copper 7.50. The analyses yielded results as follows:

Copper.....	91.40%
Tin.....	3.07%
Lead.....	0.82%
Iron.....	0.53%
Cobalt.....	0.09%
Sulphur.....	0.82%
	<hr/>
	96.73%
Thallium.....	?

Other metals often associated with Copper were tested for and not found, but tests indicated Thallium. This element Thallium occurs in some copper ores in Mexico as the mineral Crookesite, a copper Thallium selenite sulphide; and it is believed the portion unaccounted for in the analysis was due to the Thallium.

The little copper bells in the Museum collections seem to have been found in Mexican sites as well as in Central America, and are quite abundant in some localities. Some of these bells were about one half to three-quarters of an inch long, others of more than two inches and of different shape.

S. G. Morley in his description of Copan says:

"The discovery of copper bells of Mexican origin at a number of archaeological sites in Arizona and New Mexico clearly point to trade relations between the Pueblo Indians and the tribes of Central America in pre-Columbian times; these bells very closely resemble the copper bells found in the sacred Cenotes of Chichen Itza, Yucatan, which can hardly have been carried there before 1200 A. D.

Analysis has proved these metal bells to be copper with some little impurities; and it is believed they were cast by what is known as the *cire perdue* process. This method consists in using a wax model, or a core of clay covered with a wax pattern, the mould being heated, the wax melted and ran out, leaving the shape of the object to be cast, which was then filled with the melted metal. This is interesting because this process was well known to the makers of bronze ornaments in Europe, and it is a question if these little bells found in the Aztec or Maya burials were made by the *cire perdue* process; was it a discovery by the American race independent of foreign knowledge?

This might suggest a greater antiquity for this art of casting than that in Europe and would show a considerable amount of experience in metallurgy for the aborigines, and it is surprising that more elaborate objects were not made by them. Judging from the character and variety of cast objects of bronze from South America, the ancient Peruvians were familiar with the *cire perdue* method. Did the Inca discover it? They were certainly the earliest users of the alloy bronze in America with the exception of the unknown builders of Tiahuanaco, among whose ruins have been found bronze tools. With regard to the knowledge the Aztecs had of bronze, it is difficult to establish their claim until more analyses are made of specimens of undoubted Mexican origin, indicating an alloy with a composition of about 90% copper and 10% tin. The following analyses by P. Rivet, taken from his contribution in the *Journal de la Société des Américanistes de Paris* show to what extent tin was used by the Aztecs in their metal objects.

Objects from Mexico

<i>Locality</i>	<i>Object</i>	<i>Copper</i>	<i>Tin</i>
Valley of Mexico	Chisel	97.87%	2.13%
Atotonilco	Hatchet	98.05%	1.91%
Tlaxiaco	"	99.61%	0.17%
Tlacolula	"	Copper	No tin
Oaxaca	"	"	"
Mexican	Bell	"	"

Other metal objects of Mexican origin yielded thus:

Currency hatchets	25 samples	All copper	No tin
Knife hatchets	5 "	"	"
Flat hatchets	7 "	"	"
Chisels	8 "	"	"
Hatchets	13 "	3 samples with no tin	
Lance points	7 "	1 " " "	"
Bells	26 "	Copper " "	"

Some 28 objects, when analyzed, showed the presence of tin was intentional. Punches, lance points and needles were bronze, while money hatchets, and thin hatchet blades contained no tin. Of 108 samples of metals analyzed, only 38 contained tin. Lance points and chisel hatchets had from 2.13% to 3.4% tin. Two specimens of hatchets contained 9.3% of tin. But it is a question, were they of pre-Columbian origin or made *after* the arrival of the Spaniards?

From the analyses of the Mexican metal objects it is evident that tin was not generally employed for obtaining a hard alloy, which required about 10%. The small amount of tin usually found would rather indicate an accidental impurity in the copper than an intentional ingredient in the alloy.

That the ancient Mexicans or Aztec people were familiar with the metallurgy of gold, silver and copper, the process of hammering, fusing and casting, there is no doubt, and that they understood soldering and even the plating of gold and silver on copper is suggested by the specimens in the museum collections.

The Bronze Age as determined by analyses of the specimens described, is still a matter of doubt for the Aztec, and must

remain an open question until it can be decided by finding more specimens of recognized bronze composition, and of undoubted Mexican manufacture of pre-Columbian date.

II

The Maya were in the Stone Age in pre-Columbian times, although in the latter part of the Second Empire, they seem to have developed a knowledge of working the precious metals and copper; possibly this was due to the facility of obtaining copper and other metals from the neighboring provinces of Mexico with whom they traded. Copper objects said to be from Central America are not numerous in our museums, and although the old Spanish writers speak of "Bronze" it is doubtful if they knew the chemical composition of that metal and how it differed from Copper. Some metal specimens from Central America have been analysed. Small bells, needles and figurines from Chiriqui proved to be copper with no tin. Some bells contained 80% of Copper and 20% of gold. Of course none of these were Bronze. Some little bells from Bolivia and Argentina analysed Copper 99.35% and Tin 0.65%. The tin doubtless was an impurity in the Copper.

Another metal object said to be found in Central America is a T-shaped implement like those common in Mexico. A specimen said to be of Maya origin from the Peabody Museum, Cambridge, when analysed, proved to be simply *Copper*. A small copper bell from Yucatan upon analysis gave;

Copper	97.00%
Tin	.34%
Lead	1.00
Iron	.07%
	<hr/>
	98.41%

A small bell from a cenote at Chichen Itza, Yucatan, yielded:¹

Copper	98.44%
Iron	0.78%
Nickel	trace
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	99.22%

¹ Analyses made at University of Pennsylvania by Dr. D. L. Wallace.

The effigy of a Jaguar from a sacrificial deposit at Chichen Itza gave:¹

Copper	60.00%
Gold	35.00%
Silver	3.00%
Iron	0.40%
	<hr/>
	98.40%

Some metal objects from Tiahuanaco gave interesting results:²

Object	Copper	Tin	Iron
Knife	93.80%	6.17%	0
"	96.44%	2.93%	0
Chisel	96.99%	2.51%	0.30%
Hatchet	95.92%	3.27%	0
Pin	91.41%	7.70%	0.41%
Clamp	95.65%	0	1.63%

The following are from the Island of Titicaca:²

Object	Copper	Tin	
Hatchet	90.00%	10.02%	True Bronze
Chisel	Copper	None	
"	90.51%	8.92%	True Bronze
Knife	90.00%	9.12%	Bronze
"	97.60%	3.06%	
Drill	94.81%	7.56%	Bronze
Needle	96.00%	4.00%	

These analyses of tools from Tiahuanaco, and the Island of Titicaca are instructive, for they show that while the other nations (with the exception of the Inca) in South America, were undoubtedly in the Stone Age, the builders of Tiahuanaco it seemed had advanced into the Bronze Age and produced tools and implements of that metal.

With regard to the Maya civilization it certainly had reached a triumph of architecture and sculpture, but there is little to

² Analyses taken from Journal de la Société des Américanistes de Paris.

show it had reached the Bronze Age. It is doubtful if any specimens of metal work have been found from the First Empire, and such metal objects as have been claimed by the Second Empire may be the copper tools or implements made from the Copper of Oaxaca, Mexico, and possibly were fashioned by the ancient Aztec people.

The surprising part of the massive and highly decorated stone structures in Central America, is their elaborate and artistic ornamentation as well as the skill required in quarrying large blocks of stone and joining them together with the cabinet-maker's *accuracy*, and all this with *stone tools*.

BOOK REVIEWS

METHODS AND PRINCIPLES

Anthropology. A. L. KROEBER. New York. Harcourt, Brace and Company, 1923. x, and 523 pp. \$4.50

This is the most complete and best balanced book on anthropology that I know of. It is so well written that it is almost literature, so good that it is almost great; and so sound that it will take a lot of juggling for our Huntingtons, Easts, Wiggams, Goulds, McDougalls, Stoddards, and the rest of the tribe of racemongers and eugenists to conjure any white rabbits out of it. Though just why the author felt he had to add a "Caucasian" to a Mongoloid-Negroid division of Man, and within the Caucasian limit the number of "races" to four, I do not know, nor does he give us any good reason. But it is a sane book and can safely be recommended to those who want to know what a real anthropologist has to say about anthropology.

Races, living and dead, and the race problem; language and the spread of the alphabet; the problems of heredity and climate, and of diffusion and parallels—with a chapter on the arch and the week for purposes of illustration; the beginnings of civilization; the growth of primitive religion; the history of civilization in North America, and the growth of civilization in the Old World. So runs, with slight modification, the tempting bill of fare. And it is all palatable, easily digestible, and full of calories. But will it support the growing body of the child, anthropology? As that question has personal value for every anthropologist, it is worth manipulating.

Anthropology, says Kroeber in his introductory chapter, is the "science of Man and his works." But that definition is too broad: too many well-established sciences claim Man and his works to leave any place in the sun for anthropology. How shall it shine then?

In the fact that the Louisiana Negro is black, has thick lips, is lazy, and sings "Suwanee River," Kroeber finds two forces at work, heredity and environment, nature and nurture. This furnishes us with a problem: which is nature, which nurture? The problem is not to be solved by history, for history is not concerned with nature; nor by biology, for biology is not concerned with nurture. Enter anthropology. Its specific task is to interpret phenomena into which both nature and nurture enter.

The untangling and determination and reconciling of these two sets of forces are anthropology's own . . . the focus of its attention and an ultimate goal.

That Kroeber so promptly follows with the frank admission that anthropology has yet "not much of a solution to offer" is all to the good. Does "the fact that anthropology rests upon biological and underlies purely historical sciences" and the equally obvious fact that most anthropologists know next to nothing of biology and that history as written rests on nothing remotely related to any science, give us any clue to that failure? Or is there a deeper reason?

Does anthropology fail to offer "much of a solution" because it fails to recognize the fundamental biologic unity in the problem of the negro's skin color, shiftlessness, and Suwanee River? Or, to put it another way, is not its failure due to its attempt to isolate two forces which are in reality one? Little progress was made in the problem of organic evolution so long as attention was confined to a search for differences between organic and inorganic. Possibly we shall make little headway in solving the problems of human culture so long as we are bent on finding where nature leaves off and nurture begins.

A Kroeber writing a text-book on anthropology and a Kroeber being measured by a pair of callipers and a color chart to find out his racial affinities, are but two aspects of one problem. Both aspects are open to investigation and each is best investigated by a specialist. But both aspects are biologic problems and both deal with a living organism in a state of nature. We are no more justified in studying the book apart from the writer than in studying the writer apart from the book—together they make the man, the proper study of anthropology. Our environment of books is part of our *natural* environment. To draw the line between nature and nurture may be a convenience. Let us recognize it as such, but let us not forget that if we, as anthropologists, spend our lives in trying to untangle organic from social causes, we shall never get very close to the nature of Man or his works. "Social" causes *are* "organic" causes; and both are but manifestations of a relationship between nature and Man.

Herein, it seems to me, is a real field for the anthropologist. Not, where has nature left off and where has nurture begun; but, what is the nature of Man and his works and what are the underlying biologic impulses which have driven human intelligence into such different channels to satisfy organic hungers in this world of nature? To speak of "civilization," as did Huxley, as "an artificial world" built by Man within the cosmos, is to pull ourselves up by our bootstraps.

I should be hard pressed if I had to define "civilization," but whatever it is, it began to "grow" when protoplasm began to live. Nature evolving eyes and Man inventing eyeglasses are equally "natural." True, we can distinguish eyes from organisms and from bony sockets, and eyeglasses from the man who wears them or the man who makes them, but eyes, sockets, and eyeglasses are not to be understood apart from Man. To seek for causes of the negro's lips and shiftless disposition is to lose sight of the negro. To try to separate the negro from his environment is to deprive the negro of life and environment of a living organism.

Anthropology will be on its way toward a science when it begins to grasp the principle of the fundamental unity of biologic and social problems, and the common biologic background of Man and his works. It will prove itself a valuable science when it boldly tackles the problem of the nature of Man and his works as one problem and does not hesitate to attempt a re-synthesis of Man from such analyses as may be made by other sciences. There is room for an aggressive, enlightened science of Man.

In all this I am not aware that I have said anything with which the author of *Anthropology* would disagree. I have merely tried to give expression to a long-felt conviction that it is time anthropologists recast their program, reformulate their problems, and enlarge their vision. It is not enough to describe physical types and trace the growth and dissemination of culture. Anthropology can be satisfied with nothing less than a whole man.

To that science Kroeber's book is a welcome contribution; and, personally, I am grateful. Especially when I think of the advance it marks over my student days, when I spent eight weeks assorting a tray of potsherds, and a friend of mine, as graduate student in the University of Chicago, was being assigned the "next eight pages of de Quatrefages" for his next lesson.

GEORGE A. DORSEY.

Monotheism among Primitive Peoples. PAUL RADIN. London: George Allen and Unwin, Ltd., 1924. 69 pp. 1 s.

This paper, originally presented as one of the Arthur Davis Memorial Lectures, expresses an extremely interesting suggestion, to wit, that monotheistic conceptions are rooted not in a distinctive form of civilization but in a peculiar type of temperament. Since

this type is everywhere likely to occur with a certain frequency, we must therefore expect to find monotheism—not necessarily, of course, as on obligatory faith—at every cultural level.

This anti-unilinear position is certainly in harmony with modern anthropological thought, and it is particularly gratifying to find Doctor Radin basing his argument on the phenomenon of individual variability. What I feel bound to question, however, is his definition of the type that evolves monotheistic ideals. According to the author, it is the eminently devout—as opposed to the intermittently religious—temperament that must be credited with monotheism. Since he himself, however, takes pains (p. 18) to characterize the craving for a co-ordination of experience and the ethical impulse as “essentially non-religious,” it would seem that the philosophical rather than the religious temperament (as defined by the author) evolves monotheistic conceptions. It would be interesting to examine a fuller development of Doctor Radin’s thesis, which might clarify this patent contradiction.

ROBERT H. LOWIE

Reallexikon der Vorgeschichte. Herausgegeben von MAX EBERT.
Berlin: Walter de Gruyter and Co., 1924 and 1925.

At the time of writing three volumes of this remarkable work have reached the *American Anthropologist*. It is being issued in installments of approximately one hundred pages and at the subscription price of 6 mk. each. In the Preface Professor Ebert (Königsberg) outlines the scheme of his project. The primary object of the undertaking is to provide an authoritative survey of European prehistory, together with that of the Near Orient. While archaeological data and problems are stressed, philology, physical anthropology, and sociology are by no means slighted. The inclusion of certain topics naturally depended upon other than strictly logical considerations. Thus India has been reluctantly excluded from discussion because of the fragmentary state of our knowledge. China and Eastern Asia generally lay outside the scope of the enterprise, but Siberia is included; and while the archaeology of the New World, except for a general article, falls outside the limits set by the editor, the sociological essays take full cognizance of American data.

The list of collaborators is an impressive one, comprising Scandinavian, Finnish, Spanish, and Italian, as well as German and Austrian

names. Among the best known in America may be mentioned the late Professor Montelius (Stockholm), Schuchhardt (Berlin), and Tallgren (Helsingfors). Physical anthropology has been allotted to Professor Reche (Vienna). American students will be pleased to find numerous articles on comparative sociology by Doctor Thurnwald (Berlin).

Both the typography and the copious illustrations are of a high order of excellence, and the articles examined by the reviewer seem to combine profound knowledge with sanity of judgment. In short, this encyclopædic work may be heartily recommended to all students of anthropology.

ROBERT H. LOWIE

Primitive Religion. ROBERT H. LOWIE. Boni and Liveright: New York, 1924. \$3.50

Among the writers who have recently been meeting the urgent pedagogic need for text-books in anthropology R. H. Lowie has seemed to me the most adequate for the reader we ambiguously refer to as the advanced student, whether in or out of college. For Lowie not only expounds very lucidly, but he takes the reader with him into his workshop which is a place both orderly and stimulating, where there is plenty of well classified material, but where sources and authorities are rendered merely contributory to the subjects under discussion and never allowed to override or arrest thought, in other words where the student is informed but also expected to think.

Like *Culture and Ethnology* and *Primitive Society*, *Primitive Religion* is both informative and stirring. The book is formally divided into three parts: "synthetic sketches" of the religion of four groups, the Crow Indians of Montana, the Ekoi of West Africa, the Bukaua of New Guinea, and various Polynesian Islanders; a critique of the theories of animism, magic, and collectivism; "historical and psychological aspects" or discussion of various subjects such as individual variability, the relations between religion and art, between religion and sex, secondary association and other features of distribution. Part I not only supplies illustrative data for subsequent discussion, it offers keys of interpretation, as in its masterly analyses of how the apparently individualistic vision seeker is bound by his social patterns, as the writer puts it, the most extreme subjectivism merging in servility to folk-belief and usage; of how essential to

understanding a cultural complex is the weighting of its traits; or of how in comparing cultures, the comparison not of single traits but of traits as a whole, weighted and organized, is indispensable. Catchwords fail. What greater lesson has the anthropologist to suggest? Consistently, as the writer sets forth criteria for a definition of religion and discusses religious theories he shows himself unhampered by formula and admirably critical, whether of Tylor's too sweeping animism, of the Lang or Schmidt high-God hypotheses, of the arbitrary distinctions between magic and religion, of Frazer and Durkheim, or of Durkheim's insistence upon the nexus between religion and the social group.

The writer's own approach to religious phenomena, he has said, is psychological, it is concerned with the state of mind of those observed, with their sense of mystery, of discrimination, emotional and intellectual, between natural and supernatural. There is little to object to in this definition of religion as an expression of the sense of the supernatural, more particularly as the writer has added that the definition leads not to any rigid exclusion "but merely to a somewhat different appraisal of features commonly treated under the head of religion." Certainly the definition is inclusive enough to be entirely workable, with one assumption, that all peoples have a sense of the supernatural. But have they? Of course Lowie points out that the supernatural is not always divested of materiality, but even with this allowance for the indistinguishable between natural and supernatural are we certain that all societies "recognize in some form or other awe-inspiring, extraordinary manifestations of reality?" Perhaps so, perhaps this sense is shared even with other species, but why so certain? Can it be that Lowie's conception of religion is influenced unconsciously by the religion of the people he is presumably best acquainted with, the subjective-minded Plains Indians? To be sure, Lowie is also acquainted at first hand with an extremely objective-minded tribe, the Hopi of Arizona; but they seem not to have suggested to him their conception of religion, which is pre-eminently a kind of instrumentalism, a highly systematic scheme of getting what you want or need. In a very interesting discussion of the process of rationalization in religion Lowie indicates that religion may serve the general economy, but I think he fails to allow sufficiently for the utilitarian aspect of religion which is paramount among the Pueblo Indians as well as among other ritualists.

Although the approach of *Primitive Religion* is psychological, the writer attempts little or no direct analysis. Of religious emotion,

I mean, of course, as that emotion receives cultural expression. What desires, what fears provoke the sense of the supernatural? Surely there is more to be looked into here than "high-sounding aphorism." Moreover, neglect of such questions is costly in discussion of certain aspects of religion, for example in discussion of what Lowie has called Woman and religion, with a curious lapse into the misleading vernacular of confusing "woman" with "sex." Misleading to the writer himself, for most of his discussion is concerned with the theory of the exclusion of women because of men's discomfiture in regard to menstrual functions. The writer not only revamps this familiar theory of the English anthropologists, but like them supports the theory by argument from illustrations. Better had he given the space to a consideration of the religionist's feeling of antithesis between sex and religion. This feeling and a great variety of facts of ceremonial continence have to be ignored by one who dismisses the subject of the relationship between sex and religion as a special phenomenon, not touching the core of religion. I turn from this arid conclusion to ponder the words of the old *ne'wekwe* of Zuñi who was telling me of the habits of the Sun Crier of whom continence at certain times and seasons was expected. "And at other times," I asked, "can he sleep at other times with his wife?" "He can, but after a while he won't want to."

But there are other discussions in Part III where the writer is at his best, as in the section on regional characterization, where he points out the need of intensive distribution studies and illustrates with instances of diffusion how he would

practise the historical method by tracing the distribution in time and space of traits with sharply defined individuality and . . . establish sequences where the distribution is spatially continuous or rendered plausible by documentary evidence or at least by known ethnographic principles.

Among the problems of distribution none is more alluring or perplexing than why in group contacts some traits "take" and some do not "take." Lowie does not deal with this directly, but highly relevant to its general consideration are his discussions of the interplay between cultural circumstance and psychic trait, as, for example, in the history of the Ghost dance and of the peyote cult. Here as in other well-chosen instances Lowie succeeds admirably in suggesting the complexity of the social processes as well as the significance of individual variation. He has a rare understanding of the relations between the concrete and the philosophic.

ELSIE CLEWS PARSONS

ASIA

The Folk-Lore of Bombay. R. E. ENTHOVEN, C. I. E. New York, Oxford University Press, American Branch, 1924, pp. 353. (\$4.70).

Any information about the manners and customs of India is welcome in view of the sad neglect of that country. As the author says,

Writers on primitive belief and custom have made comparatively little use of the vast store of materials to be found in India, though few other portions have escaped their attention.

The fault lies partly in circumstances. The vast and important literature of India has absorbed most of the energies available, and that literature has required so much editing and commenting on that the scholars have had little time to engage in such a searching analysis of beliefs and customs and such an extensive comparison with connected cultures as is necessary for a theoretic insight into Indian religion. Another reason is that those who have made a special study of Indian customs have usually approached it from the point of view of the folk-lorist. Now the folk-lorist's point of view is that it is among the common people that the most primitive form of belief is to be found, that the common people, and not the leaders of thought, are the best witnesses on matters of religion, and so on. It is just as if we were to seek information on the German banking system from the working man who may or may not invest in the Savings Bank rather than from the men who direct German banks: the information so collected would be most thin and scrappy. It is even so with the folk-lorist's method: it is essentially scrappy. The title of the present book sufficiently announces that this is the author's point of view: it is really a scrap-book, as good as can be expected from the method, which is the method of questionnaire. Now the questionnaire is only a *pis-aller*: first of all it assumes that we know every variety of custom and that all that remains to do is to find out their distribution, secondly it produces nothing but fragments. Man does not think in fragments, he thinks systematically, he works from one idea to another; all the world over if a new situation arises he immediately goes to his precedents for advice; and thus he gradually advances from one idea to another, losing some and acquiring new ones. Further there is a vast amount of facts which the questionnaire method will never bring to light; they can only be arrived at by a study of concrete facts. The outcome of the questionnaire is a collection of

facts which is tantalizing by its incompleteness, which is more valuable as raising questions than as answering them, which serves the inquirer rather as a guide does a traveller: it tells him where to go for the information he wants and see for himself. The defects of the method appear in the following case. We are told (p. 144) that the practice of giving the names of ancestors to children is common, and is due to the belief that the "spirits of the dead are reborn in children in the same family." Standing alone this fact might be described as "most interesting," be treated as a kind of curio, looked at and then put down again and forgotten; it is of no use to the theorist. It might become of use if we knew which ancestor it is: is it the grandfather? The custom of naming after the grandfather is widespread. On p. 147 we get more precise information: in the Kolāba district "the custom of giving a grandfather's name to the grandson prevails largely, and is due to the belief that the spirit of the dead are sometimes reborn in the same family." But still that is quite insufficient: we want to know the kinship system of these people, because we have a big question to answer: reincarnation in the grandson is an integral part of the original cross-cousin system or belongs to other cycles of belief as well.¹ We are given a quotation on p. 149, *Pitā putrena jāyate*. "The father is begotten by his son," but again we are disappointed of our hope of following up this clue because there is no reference to the Sanskrit treatise from which it comes. Such facts therefore must lie unused because they are given apart from the context which alone can make them of any use.

The only thing for the theorist to do is to go to Kolāba and find out in person, but in order to do this he requires funds and leisure, which are not always there. If he is lucky enough to get both he will be most grateful to Mr. Enthoven for putting him on the track, but in the meantime he can only pigeon-hole the information.

Many of the fragments which are thus useless when cast up by the questionnaire are to be found stated in great detail and with all their context by the Sanskrit writers. For instance it is of little use to tell us that

the seven Wise Men, i.e., Saptarishi, are said to have been created by the god Brahma from his own body: and teaching them the four Vedas, he handed them over to them and asked them to regulate the affairs of the world.

¹ See *India and the Pacific*, Ceylon Journal of Science, Section G, Vol. I, Pt. 2.

when any Sanskrit dictionary gives us all the meaning of ṛshi and the exact constellation which they represent, a bit of information not given by the author, when Mac Donell's *Vedic Mythology* and Hopkins' *Epic Mythology* will give us the references to an extensive literature beside which the author's allusion is as a drop to the ocean. In the same way we have to be content with mentions of Mahāpurusha, Shiva, Vishnu, Brihaspati (Grihaspati on p. 97 must be a misprint), shraddha, etc., all of which subjects are dealt very fully in Sanskrit literature. There is no point in telling us that "in the Puranas there are instances of males being transformed into females, and females into males" when we have the Puranas to read if we chose; it would be more to the point if we had the references to those passages.

The fact is that our Indian folk-lorists set aside the religion of Sanskrit literature which they take to be the artificial creation of a priestly caste, and go to the common people in the hope of finding there natural, or as it is now called primitive, religion; but the priestly religion follows them everywhere; they try and ignore it, but it takes its revenge by withholding from them the key to their facts. I take a page at random, p. 189, which deals with the monkey-god, supposed to be aboriginal, non-Aryan; I there find mention of the "Dandaka forest (the name given to Maharashtra in the Mahabharata epic), Rama, Marut, Rishis, Brahmans, Brahmachari, Vajramaya, Mantra-shastra, Vira, Dasa, all Sanskrit words and names for the understanding of which we have to turn to Sanskrit literature, and if we do look up Sanskrit literature we shall scarcely require the scrappy information given on this page.

The truth is that the study of modern Indian beliefs is only of use as a complement to ancient Indian literature. There are many things in the latter which are obscurely or incompletely stated; these things may still be in full swing at the present day and then we have some chance of clearing up the obscurity. Again Brahmanic literature gives us only what was recognized in certain classes or in certain regions; modern examples may represent another line of tradition, and may give a wider base for the comparative method, just as modern Lithuanian supplements the information given by ancient Greek and Sanskrit. Thus when we hear of naturally perforated stones being holy at the present day we are reminded of the naturally perforated stones which play so important a part in Vedic ritual. We therefore direct our inquiries in the field so as to find a connection, and, if

there is one, complete one source of information with the other. Most important of all however is the fact that literature only states what is not common knowledge, because if every one knows why tell them? Now the things that are common knowledge are precisely the most fundamental, and therefore the most fundamental things may be alluded to in the literature; they are not stated; we are left to infer them, sometimes in vain. Here the culture in being comes to our rescue: it presents us the social organization and the common assumptions which are taken for granted by the books; it enables us to explain ancient allusions otherwise unintelligible, and thus to prove that the ancient authors were acquainted with the customs which we have found existing in the flesh at the present day. It is however in this most important function of ethnology that the folklorists fail us: they go for the curiosities rather than the fundamentals.

It may seem ungracious to find fault with an author who is doing his best to help the student. I wish to make it clear that the blame rests not with him or those other government servants who have devoted their scanty leisure hours to the furtherance of science. The blame lies with those who are supposed to direct these studies from their central position in a place of learning. The amateur in the field looks to them for guidance; he can only believe that what they tell him to do is for the advancement of science; he may have doubts, but his modesty bids him repress them, and so he sets out on a dreary and unprofitable collection of facts. Is it too early to hope that the revolt against barren facts will soon triumph and that willing workers, like Mr. Enthoven, will soon be set the entrancing task of pursuing through ups and downs of success and failure a theory that after many evasions will at last be caught in their net?

Failing proper guidance, books such as the present must always be welcome, for they form, as I have said useful indices. Since however that is their chief function it is desirable that they should always have maps to save the reader having to refer to the Indian Gazetteer which is not a very portable work. A thorough index is also most important. The index in this case is somewhat thin and omits very important names.

A. M. HOCART

AFRICA

The Lango, A Nilotic Tribe of Uganda. J. H. DRIBERG (Uganda Civil Service). With a Foreword by SIR ROBERT THORNE CORYNDON, K. C. M.G. (Governor of the Uganda Province)
London: T. Fisher Unwin, Ltd. 468 pp., ill.

This work is adequate in every respect except one; almost no data concerning the physical anthropology of the Lango are included. The author states that physical measurements of this tribe are unobtainable. This is unfortunate, because of the fact that the tribe seems to be unusually healthy and practically free from the ravages of syphilis, malaria, and sleeping sickness. Hence its members would be especially good subjects for anthropometric investigation. Also from the fact that the author does include an excellent summary of pathological conditions and some extremely valuable data on the number and sex and mortality of children born to individual mothers one is led to believe that Mr. Driberg would have made an important contribution to the physical anthropology of this tribe, had he been able to study it. He gives the impression of being a first-rate investigator.

The work begins with a historical treatment of the origin and migrations of the Lango, who are thought to have reached their present home in the Eastern Province of Uganda some two hundred years ago, having wandered in a southeasterly direction from the Shilluk area. Their language shows a close affinity with that of the Shilluk and they are thought to have been driven southward by Hamitic immigrants and by famine and shortness of water.

The account of their psychical characteristics indicates that the Lango are a very superior people. Although they are rather unstable emotionally they are uncommonly sensible and have a hearty distaste for all types of malignant witchcraft. They have high ideas of morality and live up to them; they are brave warriors and industrious agriculturists. They are extremely individualistic and independent.

The material culture of the Lango is carefully described. Perhaps the most interesting feature of it is the curious bachelor hut which is perched upon piles, is approached by a log staircase, and entered by a circular opening just wide enough for the body to squeeze through. No entirely satisfactory explanation of the origin of this structure is available.

The study of terms of relationship raises a number of points of interest to the student of social organization. The Lango culture possesses numerous features that have usually been considered relics of a matrilineal system. An examination of the relationship system shows, however, that actual patrilineal descent among the Nilotes must be very old, and the author is of the opinion that a strong matrilineal bias may have been introduced recently when the Nilotes were living on such amicable terms with their Hamitic neighbors that the former were able to marry Hamitic women. Such a bias would have re-inforced the remnant of matrilineal descent which had survived, even if the Hamitic women were derived from patrilineal Hamitic tribes.

The Lango are not only unusually reticent in matters of religion and magic, but are also extremely vague and uncertain on the essential points of their religion. For this reason the author feels that his account of their religion and magic is "somewhat spasmodic." Apparently their religion is

compounded of two separate elements, which are now treated as distinct, now as indissoluble, namely ancestrolatry on the one hand, and on the other hand monotheism, which has by now largely broken down, but was formerly observed in the person of the high god *jok*.

The second half of the book is devoted to a grammar, vocabularies and texts of folk-tales.

Mr. Driberg offers his book, which represents a labor carried on intermittently during six years of residence among the Lango, as "the contribution of an amateur." The reviewer is of the opinion that this work would be a credit to any professional anthropologist. Perhaps the best that one can hope for African anthropology is that the French and British military and civil services in that continent be filled with men of the caliber and aims of the author of the present work.

E. A. HOOTON

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DISCUSSION AND CORRESPONDENCE

ABOUT CREMATION

The first number of this year's *American Anthropologist* contained an able paper by W. C. Macleod on the "Mortuary Aspects of Northwest Culture," which could not but immensely interest me because of its frequent references to my former charge, the Western Déné. In a note on the first and second pages of his effort, the author, mentioning my contention that cremation had been borrowed by the Carrier from the Tsimshian of the Skeena, puts on record his belief that my statement "is merely a deduction without a knowledge of the 'attendant practices' among the Tsimshian." I confess that I cannot see the ultimate end of this remark. I knew those practices from the writings of Dr. Boas and others, through visits to the Coast, and especially through the Tsimshian of the Skeena themselves, who lived within the territory assigned to my missionary activities. But *transeat*.

What I want to comment on is the author's assertion, after he has mentioned my reference to the "non-cremating Sikanni," that "in Harmon's time Sikanni practice was the same as that of the Carriers" (*op. cit.*, p. 123). This, to my most certain knowledge, is so far from the truth that, though I am here away from my library and even copies of my own past writings, I felt at first like contradicting it point-blank and without any authority to support my word.

For this much is beyond the shadow of a doubt: the inland aborigines of northern British Columbia in contact with the Tsimshian borrowed from them cremation, the consequent potlatch and labret-wearing. The nearest neighbours of the latter, the Babine, adopted all of these three customs; the Carriers, farther inland and their immediate neighbours, borrowed from the same only cremation and the potlatch. As to the Sékanai, whose habitat is still farther away, namely east of that of the Carriers and whose social organization is quite different, they adopted neither cremation nor labret-wearing, but had made a faint, local and not over successful attempt at potlatching when they had to yield to the influence of the white newcomers.

Of this I am so sure that, I repeat it, my first impulse was to deny totally Macleod's assertion that, in Harmon's time, the latter burned their dead just like the Carriers—and that in spite of his references to that trader's journal. In the first place, it is a well-known fact that that worthy's little book had been considerably "edited" by a Protestant minister of New England before it was deemed worthy to be presented to the "christian publick." And then I personally know of statements by other such traders which are entirely worthless, even when found in regular books.

Yet I thought it more proper to get Harmon's work, so that I might be able to control Macleod's references. The first is p. 161. Thumbing the trader's Journal, I find, what? That the Sékanai practised cremation just like their neighbours the Carriers? Not by any means. "The Sicannies," says Harmon, "bury, while the Tâ-cullies (the Carriers) burn their dead." I cannot understand such a disastrous distraction on the part of a scientific writer.

His second reference is p. 163. There I find indeed that "this day the Natives have burned the corpse of one of their chiefs." But was that among the Sékanai? Not at all; it was among the Carriers of Fraser Lake (*cf.* p. 162).

Macleod's last reference, for a wonder, would at first seem to bear him out in his contention. "A Sicanny died at this place," says Harmon, "and the following circumstances attended his incineration." But again where did that occur? At Stuart Lake, the capital of the Carriers. As happened more than once, two Carrier women had married a Sékanais for the sake of his extensive hunting-grounds, and, on his demise, they and their fellow-tribesmen followed their own mourning rites and cremated his remains as if he had been one of them.

This is so true that Harmon afterwards shows the two widows "carrying" daily a little satchel containing some of the bones of their late husband, a custom which I am sure even Macleod, if he knows anything of prehistoric Déné sociology, will not put to the credit of the Sékanai, and points to the ultimate potlatch which would have been a sheer impossibility to the Sékanai, for the good reason that, being nomadic, they had not a single house, let alone feasting-lodge, to assemble in.

The point, therefore, is now settled, and we cannot escape the conclusion that, even in Harmon's time, while the Carriers cremated their dead, the Sékanai did not.

A. G. MORICE, O.M.I.

FIVE AS A MYSTIC NUMBER

Four figures so prominently as the only or chief mystic number in North America that other sacred numbers are usually mentioned as deserving of special notice. So far as I know, five as a sacred number is restricted to the Far West, and to a rather limited region there. Professor Kroeber notes its occurrence in northwestern California, southwestern Oregon, the lower Columbia area, and Puget Sound.¹ Mrs. Erna Gunther Spier is able to confirm this statement for the last mentioned area on the basis of recent field work; and I have called attention to the prominence of five among the Paviotso.²

When reading Professor Karsten's account of the Toba I was struck with the ritual and mythological significance of five,³ and I have since encountered several additional references of interest. The Chiriguano of the Gran Chaco impose upon the father of a new-born child a five days' fast and rest.⁴ From the Witoto of Colombia the evidence is not decisive, but I note that the universe is conceived by these Indians as a series of five strata and that five years must elapse before the same man may again act in the capacity of master of ceremonies at the Juka festival.⁵

The gap between central California and Colombia is in a measure bridged by the predominance of five as the mystic number of the Tepecano of Jalisco, Mexico.⁶ It would be of considerable interest to discover whether a continuous distribution could be established for this trait in South America and ultimately for the whole of the New World.

ROBERT H. LOWIE

¹ A. L. Kroeber, *California Culture Provinces*, Univ. of Cal. Pub. in Amer. Arch. and Ethnol., vol. 17, no. 2, 1920, p. 161.

² R. H. Lowie, *The Cultural Connections of California and Plateau Shoshonean Tribes*, same series, vol. 20, 1923, p. 154.

³ R. Karsten, *The Toba Indians of the Bolivian Gran Chaco*, Aabo, 1923, pp. 22, 27, 109 f.

⁴ E. Nordenskiöld, *Indianerleben*, Leipzig, 1912, p. 206.

⁵ K. Th. Preuss, *Religion u. Mythologie der Uitoto*, 1, Göttingen, 1921, pp. 49, 124.

⁶ J. A. Mason in E. C. Parsons, *American Indian Life*, 1922, pp. 203-236.

TOTEM POLES

To aid me in my compilation of information about totem poles, I would be glad to receive from those institutions and individuals who have not already sent me the material, a full list of totem poles and house posts (not models) in their charge.

I desire the catalogue number of each specimen, the name and address of the person or museum owning it, its height, the location from which it came (including its position in the village and relation to other poles) and reference to catalogue numbers of photographs and motion pictures of it, as well as to illustrations of and literature about it.

A catalogue of photographs of these objects is also desired. While complete information is sought, any clue to obscure poles will be welcome, even to poles in situ.

HARLAN I. SMITH
National Museum of Canada,
Ottawa.

A CORRECTION

I should like to call attention to several errors in citations accompanying the article of Mr. Waldemar Bogoras, "Ideas of Space and Time in the Conception of Primitive Religion" which appeared in the *American Anthropologist*, n.s. v. 27, no. 2, April-June, 1925. pp. 205-283.

Quotations appearing in footnotes 9, 10, 14, 35, and 37 which are credited to me are taken from Mr. M. R. Harrington's "Religion and Ceremonies of the Lenape," *Indian Notes and Monographs*, Museum of the American Indian, Heye Foundation. no. 19, 1921.

No doubt the error is a purely clerical one because Dr. Bogoras seems to have studied Mr. Harrington's pages with interest and profit.

ALANSON SKINNER

PROCEEDINGS
OF THE
LINGUISTIC SOCIETY OF AMERICA
AT THE ORGANIZATION MEETING IN NEW YORK,
DECEMBER 28, 1924

On the morning of December 28th, 1924, a meeting for the purpose of organizing a linguistic society was held in the American Museum of Natural History, 77th Street and Central Park West, New York City, in accordance with the call issued by Professor Leonard Bloomfield, Professor G. M. Bolling, and Professor E. H. Sturtevant, with the approval and over the signatures of twenty-six other scholars in linguistics.

The registration desk was presided over by Mr. J. R. Ware and Mr. F. B. Krauss, and record was secured of the attendance of sixty-nine present.

The meeting selected the name Linguistic Society of America, and adopted a constitution for the new Society. The following officers were elected for 1925:

President, Professor Herman Collitz, Johns Hopkins University.
Vice-President, Professor Carl D. Buck, University of Chicago.
Secretary, Professor Roland G. Kent, University of Pennsylvania.
Treasurer, Professor Roland G. Kent, University of Pennsylvania.

Executive Committee, the preceding and
Professor Franz Boas, Columbia University.
Professor Oliver Farrar Emerson, Western Reserve University.
Professor Edgar Howard Sturtevant, Yale University.

Committee on Publication:

Professor George Melville Bolling, Ohio State University.
Professor Aurelio M. Espinosa, Stanford University.
Dr. Edward Sapir, Victoria Museum, Ottawa.

The Linguistic Society of America was founded for the advancement of the scientific study of language. The Society plans to promote this aim by bringing students of language together in its meetings, and by publishing the fruits of research. It has established a quarterly journal, *Language*, of which two numbers have already been issued, and will soon start a series of monographs; the latter will appear at irregular intervals, according to the material offered to the Committee on Publications and the funds available for the purpose.

Members will receive both in return for the annual dues of Five Dollars.

Membership in the Society, which now includes two hundred and eighty-five persons, is not restricted to professed scholars in linguistics. All persons, whether men or women, who are in sympathy with the objects of the Society, are invited to give it their assistance in furthering its work. Application for membership should be made to the Secretary, Professor Roland G. Kent, University of Pennsylvania, Philadelphia, Pa.

F. G. SPECK

NOTES ON STATE ARCHAEOLOGICAL SURVEYS DURING 1924

It has been the custom for the Committee on State Archaeological Surveys of the Division of Anthropology and Psychology of the National Research Council to record in the "American Anthropologist" the work accomplished each year by the states. Herewith are presented summaries of the archaeological activities for 1924 of such states as have reported to the Committee. There are also appended brief résumés of the archaeological and ethnological investigations of certain museums and other scientific institutions of the United States and Canada. The list is far from complete, but it is hoped that in future years a fuller record may be gathered and that the annual report of the Committee may develop into a yearly recapitulation of all field work in the Americas.

Alabama. Since last reported, activities of an archaeological character in Alabama have been confined to the work of the U. S. Bureau of American Ethnology and the Alabama Anthropological Society.

The Bureau of American Ethnology has conducted work in the Muscle Shoals Project above Wilson Dam at the mouth of Town Creek, and at one or two places in the vicinity. The immediate supervision of this activity was under Mr. Gerard Fowke, who spent some two or three months here, and at a point ten miles west of Moulton in Lawrence County. Reports of this activity will be made through bulletins of the Bureau. The results of his work in the nature of relics were on display at Courtland for some weeks and Mr. Fowke was very generous in giving an opportunity to visitors to observe the manner of conducting such work. A large mound on Town Creek about 80% of which was periwinkle shells was trenched through.

Numbers of flaking tools and bone and shell picks for removing the food from the boiled crustations were found. In another mound further down the river some copper objects were found.

A large mound in Moulton County some miles south of the Tennessee River yielded quite a few objects, but none of Mr. Fowke's finds indicated a culture unknown to local investigators.

The Alabama Anthropological Society during 1924 proved the custom of urn-burial to have been practiced at a locality twenty-five miles north of its former discoveries. Urns containing burials of adults, adolescents and infants were taken out at the old Alabama town of Taskigi at old Fort Toulouse at the junction of the Coosa and Tallapoosa Rivers. These burials were in direct contact with, as well as on a level with, both flexed and lengthwise placements. The lengthwise burials showed ear plugs and bear tooth ornaments, and the flexed burials indicated mortuary tributes in vessels, the latter two customs suggestive of Creek influence. Prior to 1924, no evidences of the Choctaw form of urn-burial had been located north of Pintlala Creek, some fifteen miles south of Montgomery.

Finds on Sipsey and Buttahatchee Rivers in Walker County have been numerous in recent months. These are largely the results of agricultural operations. Urns have been taken out on Catoma Creek in Montgomery County, and shell objects of a culture similar to that at Moundville have been located on Line Creek, seventeen miles east of Montgomery. At this latter place, however, extensive exploration has failed to indicate evidence of urn-burials.

The Anthropological Society has placed markers during the year at three places connected with the aboriginal history of the State and these localities have some archaeological connection. The plans formulated some two years since looking toward the acquirement of all mound sites by the State to make of these sites small parks, have gone forward and it is believed that in no distant future this will be consummated. *Peter A. Brannon, President Alabama Anthropological Society.*

California. The University of California survey of archaeological sites in the southern San Joaquin Valley was concluded in 1924, and important collections were studied, preparatory to publishing a report on the archaeology of the region. The famous Emeryville shellmound, near Oakland was razed by steam shovel in December. Through the generosity of the owner the University of California kept two archaeologists on the ground to collect specimens as they were exposed by the shovel. *E. W. Gifford.*

Colorado. The work of 1924 was a continuation of that of 1923, which was in the charge of F. H. H. Roberts, Jr., under the supervision of J. A. Jeançon. The object of the two seasons' work was the acquiring of material for an archaeological map of Colorado, as far as was possible. In 1923 there was surveyed the area from Pagosa Springs in south-central Colorado to the Utah border—east and west; and from the New Mexico border to about forty miles north of it.

In 1924 the writer took full charge of the expedition. We covered a part of the previous year's work for corroborative data and also spent 3 weeks in intensive research in the pit-house at the foot of the Chimney Rock mesa—Pagosa-Piedra region. Some exceedingly fine, new material was found in our pit-house research and also much which was so confusing that it will need a great deal of study to sort out definite and indefinite things.

Early in July we took up the mapping from where Roberts left off in 1923 and continued it to within about forty miles of Grand Junction. Later we investigated certain types of ruins in Moffat County in the northwestern corner of Colorado.

In our work of both 1923 and 1924 we attempted to cover extensions of Colorado culture areas into New Mexico and southeastern Utah and for that reason made extensive expeditions into both of those states.

In connection with the mapping we investigated a large number of hieroglyphs of historic as well as pre-historic origin and secured a mass of valuable data on the subject.

Possibly a brief review of the results of our work may be of interest. We have positive evidence that, what I call for want of a better name just now, the pit-house culture area, begins—on the east—a few miles below Pagosa Springs; extends in a southeasterly direction into New Mexico, along the western side of the Chama River as far as the bend of that river near the Cañon de Chama, thence a little south of west to the Chaco region, again south to Las Lunas region, probably down the Rio Grande, on the west side, for an indeterminate distance, returning somewhere west of Zuni, through New Mexico to Colorado and over the border north about sixty miles. From here the line runs, sharply, back to the starting point. This is only a general outline. Included in this area are many ruins of other types as well, but pithouses have been found everywhere in it, by Judd, Hough, ourselves and others. *J. A. Jeançon.*

Indiana. During the past year the Division of Geology of the State Dept. of Conservation has located archaic deposits in Jackson, Lawrence, Washington, and Harrison Counties, Indiana. Collections of relics and artifacts have been made from these localities.

In cooperation with the State Historical Commission a report on the Archaeology of Lawrence County was published. By the same cooperation a similar publication was issued for Washington County.

The Indiana Academy of Science, the Society of Indiana Pioneers, State History Conference and State Historical Commission are cooperating in this work. *W. N. Logan.*

Iowa. About half the season's work on the preliminary archaeological survey of Iowa as conducted by The State Historical Society of Iowa (Iowa City, Iowa, Dr. Benj. F. Shambaugh, Superintendent) was devoted, as were the entire seasons of 1922 and 1923, to work on a bibliography and summary of the extant literature. This phase of the work made good progress and appeared to reach a point measurably near to completion. As the contemplated preliminary survey also includes the collection of unpublished information from all who may happen to possess the same, some fifteen hundred letters of inquiry were sent out and considerable subsequent correspondence was developed. About one hundred replies furnished a body of good new data and supplied promising leads for the rapid field work which followed. About seven weeks were spent in travelling from county to county in southern Iowa, about a third of the State's ninety-nine counties being visited. The results attained were generally quite satisfactory, the rapid nature of this field survey considered. Many collections of material were studied, their owners interviewed, and, wherever possible, known sites were visited and given a superficial examination. Incidentally several new sites were discovered. On the average, this personal contact with the field, slight as it was, about doubled the available information from the counties visited. The work for 1925 is planned on the same lines that were followed in 1924. *Charles R. Keyes.*

Michigan. Since Harlan I. Smith left this state more than thirty years ago there have been no intelligent or organized efforts made to study the antiquities of Michigan, until two or three years ago. At that time the writer was invited to organize a department in the Museum of the University of Michigan, that might have some systematized and rationally directed plan. It seemed that the first thing to do would be to make an invoice, so to speak, of the archaeo-

logical remains of the state. A considerable part of this could be done in office by going through the fragmentary reports that have been published from time to time, but of course the major part of the task would consist in travelling about the state assembling information that has not been made public and locating such stations as still remain in evidence or may have, if destroyed, authenticated evidences of once having existed.

Last summer a trip was taken through the central and western part of the Lower Peninsula by automobile. This itinerary consumed about five weeks time. As a result, Mr. Frank Vreeland, who acted as assistant last year, compiled a very excellent report of sixty pages. He was able to locate, I being with him for half the time, several hundred sites,—mounds, inclosures, villages, cemeteries, embankments, etc. Since then, and since Mr. Greenman has returned from Oxford, several other short trips have been taken, each one more or less productive and adding new information.

A map of the state has been prepared which indicates all itineraries. We undertake to check up on country maps locations as we are able to verify them. The result is we have some quite complete maps of a few counties and several others in process of filling in as we assemble more information.

For the coming season, Mr. Greenman will undertake some intensive work by making detailed excavations, probably commencing in Missaukee County where there are still standing some very interesting inclosures, embankments, etc.

A book, the title of which will be "Primitive Man in Michigan," has been written. It will be of about 250 pages and will contain 40 pages of illustrations. It will be published as a University report and, in case it possesses no other merit, it will show at least a disposition, that has within the past two or three years taken concrete form, of the University to do some serious and forelooking work on the subject of local archaeology. *W. B. Hinsdale.*

Ohio. During the past year the entire season was spent upon the great Hopewell Group located in Ross Co. Many fine objects have been brought to light such as large pendants made of amber, a double burial with copper nose pieces, a burial with a "butterfly" head-dress trimmed with pearls and cut mica. One large necklace of pearls, containing 320 pearls in a fine state of preservation; chisels and drills of meteoric iron; one burial containing 100 copper ear-ornaments in pairs, placed in a row around the body; a cache of 40 celts, the largest

one 18 in., the smallest one 2 inches long, a cache of pipes (20) one of which was the effigy of the wild goose with head and neck forming the stem on each side, the necks wrapped around the bowl, many interesting patterns cut from mica, such as the human form, hands, eagle foot, spear, etc.; a human head fashioned out of copper, and many hundreds of ornamental objects, etc., comprise other finds.

Our work, beginning in June, will be to finish the Hopewell Group, and then begin the examination of the large mound in the Seip Group. This mound is 250 ft. long, 150 ft. wide, and 30 ft. high. This is a very large undertaking and will take several years to complete the work. *W. C. Mills.*

Oregon. Through the financial aid of Mr. Henry J. Biddle, the University of California made a survey of mound sites near Albany; and conducted excavations near Big Eddy and on Sauvies Island on the Columbia River. *E. W. Gifford.*

Tennessee. The State Archaeological Society was organized on Nov. 17th, 1924, with about sixty members. The Society is actively making preparations to protect our antiquities by proper legislation, and also engaged in procuring data for the making of a map showing the Archaeological sites in the State. Many data have already been procured. It is also contemplated that during the spring and summer months, considerable exploration work will be done. The result of our meeting for the purpose of organizing the Society, has created a great deal of interest over the State and in the discharge of my duties connected therewith, I have made a preliminary survey of the caverns, mounds and evidences of habitations along Wolf and Obed rivers in Pickett County. Pictographs of men, animals and unknown objects were recorded; rock-cut fireplaces were observed; cave deposits showing evidence of cremation were partially examined; and a representative collection of artifacts was secured. *P. E. Cox.*

Washington. The University of California, through the generous financial aid of Mr. Henry J. Biddle, conducted excavations at Spedis, Washington, in the vicinity of the Dalles. *E. W. Gifford.*

Wisconsin. The Wisconsin Archaeological Society has held eight regular monthly meetings at Milwaukee during the year. On April 11 and 12 it held its ninth annual joint meeting with the Wisconsin Academy of Science at Madison.

Four issues of the Wisconsin Archaeologist have been published. These bear the titles "Stone Pestles and Mortars," "Vilas and Oneida

Counties," "Wisconsin Gravel Pit Burials" and "Chippewa Menomini and Potawatomi." Another publication "The Fifth Addition to a Record of Wisconsin Antiquities," is in press. This is a report on all of the fieldwork accomplished by the state society in the years 1912 to 1924. During the past year fieldwork was conducted by the society especially in the Lake Kegonsa region in Dane County (by Dr. W. G. McLachlan); in the Grand River region in Green Lake county (Town L. Miller); in Barren County (J. A. H. Johnson); in the Mud Lake region in Dodge County (S. W. Faville and C. E. Brown); in Winnebago County (George Overton); in the Watertown region in Jefferson County (A. Sohrweide, Jr.); and in Columbia, Walworth, Dane and Washington counties (C. E. Brown). All of these surveys and explorations were very successful.

During the year metal tablets were provided for three groups of Indian mounds preserved in three different public parks in Madison. Three other fine groups located on the shores of Delevan Lake, in Walworth County were premanently preserved and will be marked this year.

During the summer and autumn months several thousand tourists visited Aztalan Mound Park at Lake Mills and a large number visited Man Mound Park at Baraboo. These two state mound parks are owned and operated for the public by the Wisconsin society.

The archaeological collections at the State Historical Museum, Madison, the Milwaukee Public Museum, the Logan Museum at Beloit, and the Oshkosh Public Museum at Oshkosh were all greatly increased.

Field and mound preservation work will be continued in the present year in many parts of the state. *Charles E. Brown.*

A. V. KIDDER

ANTHROPOLOGICAL WORK OF MUSEUMS AND OTHER INSTITUTIONS DURING 1924

American Museum of Natural History, New York City

The Department of Anthropology of the American Museum of Natural History sent out four field parties in 1924, as follows: the Fourth Bernheimer Expedition to northern Arizona; the Second Cañon del Muerto Expedition; an expedition to the Navajo Indians; an expedition to make a survey of Indian racial types in the Southwest and on the Pacific Coast.

Mr. Charles L. Bernheimer, as heretofore, organized, financed and led an exploring party to the country surrounding Rainbow Bridge, Navajo Mountain and Cummings Mesa. Navajo Canyon was explored to its mouth and the top of Cummings Mesa was examined in detail. The many side canyons opening into Navajo Canyon were examined; one of these contained more than forty caves, a discovery of some archaeological promise. Incidentally, Mr. Bernheimer discovered dinosaur tracks in Neskla-nizadi Canyon.

Mr. Earl H. Morris returned in the late fall to continue his explorations and excavations at Cañon del Muerto. This second visit was made in cooperation with the University of Colorado. The sites examined here have yielded very important results from a stratigraphic and chronological point of view.

Dr. Louis R. Sullivan, in connection with his studies of race crossing, visited the more important Indian schools in the Southwest and on the Pacific Coast, to obtain data on facial and tooth characters. Some 6,000 individuals were examined and special attention was given to eye, nose, and tooth forms.

Dr. P. E. Goddard continued his systematic ethnological study of the Navajo Indians, paying special attention to social organization and the linguistic problem.—*Clark Wissler, Curator-in-chief, Division of Anthropology.*

Museum of the American Indian, Heye Foundation

Arkansas. Two weeks in January 1924 were spent in investigating a great find of ancient Indian pottery in some aboriginal cemeteries at Carden Bottoms, fifty miles or so above Little Rock, Arkansas, on the Arkansas River. Here a collection of choice pieces was purchased, illustrating both painted and engraved ware, in addition to the usual pottery with incised decoration, also a number of the ornaments and implements used by the ancient people.

Idaho, Montana, and Alberta. Mr. William Wildschut commenced in May to collect ethnological specimens among the Shoshone and Bannock on the Fort Hall reservation in Idaho, but by reason of the custom of these Indians of burying all the personal belongings of the dead, old objects, excepting basketry, have become rare; consequently of about three hundred artifacts gathered from these tribes only about half are other than baskets. Later Mr. Wildschut proceeded to the Crow and Cheyenne reservations in Montana, thence to the Blackfeet in the same state, and to the Bloods and Piegan in Alberta, among all of whom objects of importance and rarity were collected.

Arizona and Mexico. Mr. E. H. Davis collected many specimens of beadwork for this institution among the Yuma Indians of Arizona. He also went among the Yaqui of Sonora, Mexico, and the Seri of Tiburon Island in the Gulf of California.

Canada, Labrador and Greenland. Dr. F. G. Speck of the University of Pennsylvania made a trip to Canada where he obtained from the Montagnais Indians of Quebec a collection of specimens comprised mostly of articles used for hunting and fishing. He also brought back some archeological specimens from this region. Dr. Speck then went to Labrador and Greenland where he obtained some interesting material from the Eskimo, Nascapsee, Mistassini and Montagnais tribes.

Canada. Mr. A. I. Hallowell of Philadelphia visited the St. Francis Abnaki Indians of Quebec, Canada, from whom a representative collection was obtained, among which are articles of fur, apparel, foods and a canoe.

Nevada. Among the most important of the recent investigations is that, started in 1924, and which was brought to completion by M. R. Harrington in certain dry caves near Lovelock, Nevada, which revealed many interesting prehistoric objects from a deposit found to be fourteen feet in depth, built up in layers by successive generation of occupancy. The articles recovered indicate that the Indians had been attracted to the spot by reason of the proximity of Humboldt Lake. Their chief subsistence was gained from wild plants, rabbits and other small mammals, fish, and ducks, and agriculture was practised on a small scale. Baskets, textiles, feather head-dresses, implements of wood, stone, and bone, well-made cordage, fish-hooks, fish-nets, entire desiccated fish, rabbit snares, and decoy ducks, are among the objects recovered from the cave deposit. The dead were wrapped with deerskin, with blankets woven of muskrat-skins, and with fish-nets, and were covered with bowl-shape baskets made of coiled willows and elaborately decorated. An adult mummy and the mummy of a child were recovered.

Of at least equal importance was a subsequent research that led to the discovery and the beginning of excavation of groups of pre-Pueblo ruins in Clark County, southeastern Nevada, which are scattered over an area several miles long. Many of the ruins lie in the valley, more or less buried in sand-dunes, but others are on the eroded ridges between the lowlands and Mormon mesa. The walls of the houses, averaging seven inches thick, are built mainly of adobe

"loaves" laid up with adobe mortar and sometimes interspersed with slabs of stone, and the whole plastered with adobe. The floors are usually of adobe, but sometimes are paved with flat sandstone fragments, and, in some houses, slabs are set on edge against the base of the walls. Little of the walls are erect, but with the charred remains of roofs sufficient has been revealed to show that the structures were rectangular, evidently of a single story, and with roofs made of poles covered with grass or tules and mud. The dwellings consisted of from one room to four or five small rooms. Burials were made in the floors of some of the rooms after they were abandoned. Accompanying the dead are earthenware vessels and minor appurtenances. The pottery consists of plain dark ware, corrugated cooking-pots in several different styles, black-on-white and black-on-yellow painted ware, mostly bowls, and black-on-red bowls and vases. The painted receptacles are ornamented with well-executed geometric patterns. Evidences of small circular kivas have been found, but aside from the usual central fireplace they do not contain the structural features characteristic of the ceremonial chambers in the Pueblo region proper in Arizona, New Mexico and Colorado. The discovery of these remains is important in that it extends the ancient Pueblo region far to the westward, across the Colorado River, and there are indications of its extension even farther. The work is still in progress here, as well as in certain caves in the vicinity, notably Salt caves, where distinct indications of prehistoric salt-mining have been found.

Nebraska and North Dakota. Dr. Melvin R. Gilmore of the Museum staff, left New York early in June and proceeded to Nebraska. He reached the Omaha Reservation in northeastern Nebraska, where he obtained a Sacred Bundle; and a number of ethnological objects from the Winnebago tribe.

In July Dr. Gilmore went to North Dakota among the Arikara to accomplish the main purpose of the year's work, which was the making of records of some ancient ritualistic ceremonies of that tribe. At the Fort Berthold Reservation, where the Arikara reside, one hundred and forty miles up the Missouri River from Bismarck, Dr. Gilmore had a council with the leading men and made arrangements for the ceremonies to be held. By this time Mr. Coffin, the Museum photographer, had arrived at camp, and the company was further enlarged by Dr. H. B. Alexander, of the University of Nebraska, and party, voluntary aids in recording the ceremonies, which began on July 24th and continued several days. The photographing

of the ceremonies, which included the Sage ceremony, the Holy Cedar Tree ceremony, and the Mother Corn ceremony, was completed by the end of July, when Mr. Coffin returned to New York. Later Dr. Gilmore obtained a collection of ethnological objects from the Arikara, and put in considerable necessary time on obtaining notes on ceremonies and other ethnological matters.

Returning to Nebraska, Dr. Gilmore obtained another shipment of Winnebago objects for the Museum. He then went on to the Santee Reservation in northern Nebraska, on the Missouri River east of the mouth of the Niobrara River; and after establishing acquaintance and confidence with the people there, succeeded in obtaining some information and many interesting museum objects from that tribe.

He then moved on to the Pawnee in Oklahoma, where he obtained some interesting objects and notes.

Panama, Chile, Boliva and Peru. Journeys by Mr. A. Hyatt Verrill among the tribes of Panama, notably the Teguala, Boorabi, Terribi or Shayshan and Coclé tribes, resulted in obtaining comprehensive collections illustrating the culture of those Indians. Proceeding thence to Chile, Mr. Verrill made collections among the Araucanian Indians, later returning by the way of Boliva and Peru, in which countries he gathered materials among the Pano and Changa tribes respectively. Again in Panama, Mr. Verrill, after a most difficult journey through a region practically unknown to whites, succeeded in gathering a large number of objects from the Sabanero-Guaymi group of Indians, who had not hitherto been represented in the Museum collections.

Nicaragua. A collecting trip was made by Mr. David E. Harrower to eastern Nicaragua, the result of which is a collection of about five hundred objects from the Rama, Mosquito, and Samu tribes.

Patagonia. Dr. Samuel K. Lothrop went to Patagonia for the purpose of collecting ethnological objects to illustrate the tribes of that region.

Minor archaeological excavations were conducted by Prof. Marshall H. Saville in graves on the coast of Peru, incident to his attendance as a delegate at the Pan American Scientific Congress at Lima; by Mr. Donald A. Cadzow at a prehistoric Algonkian burial site on Frontenac Island in Cayuga Lake, and by Mr. Foster H. Saville at an ancient Montauk site known as Soak Hides, near Easthampton, Long Island.—*George G. Heye, Director.*

New York State Museum, Albany, New York

During the fall of 1924, the New York State Museum, through its Department of Archaeology, carried on preliminary field investigations in the counties of Cayuga and Yates.—*Noah T. Clarke, Archaeologist.*

Peabody Museum of Harvard University

Owing to illness contracted in the field while conducting explorations in Arizona. Mr. S. J. Guernsey, the Assistant Director, was granted a leave of absence for the year, and the field-work in the Southwest was continued under the general supervision of Dr. Kidder. Mr. Oliver La Farge, a graduate student of the Division of Anthropology, examined a number of sites in the upper Chinlee region of Arizona. Mr. C. B. Cosgrove carried on extensive excavations among the ruins in the Mimbres Valley of New Mexico, where he obtained an excellent collection of the characteristic pottery of this valley, together with many objects of bone, shell, and other materials. An Indian burial place on the farm of Mr. John L. Waldo in Dartmouth, Massachusetts was explored under the supervision of Mr. Harry L. Shapiro, a graduate student in the Division of Anthropology.—*C. C. Willoughby, Director.*

Phillips Academy, Andover, Massachusetts

The Director of the Department of Archaeology, Mr. Warren K. Moorehead, spent the winter at Natchez, Mississippi, in exploration of mounds and village sites in that region. Some twelve or thirteen mounds were tested, but two of which proved to be burial tumuli. This substantiates Dr. Swanton's able researches among the Natchez. Apparently the larger monuments were constructed as house or temple sites. They are highly stratified. Something like seventy or eighty burials were found in one or two mounds and in village sites. It was possible to save a dozen or more crania which were sent to Dr. Hrdlicka. His report on these will be published at some future date.

A total of about 3,000 specimens were secured, about a thousand of which were presented to the state of Mississippi.

It is interesting to note that sun symbols predominated on the pottery. A further study of the region is recommended to the state authorities.

The Southwestern expedition under the direction of Dr. A. V. Kidder spent four months in excavations at the ruined pueblo of

Pecos, in San Miguel Co., New Mexico. The work consisted in clearing the rooms of two very ancient buildings partly underlying, and partly extending to the west of, the large quadrangle of the historic period. Three kivas were excavated, and about four hundred skeletons exhumed. At the close of the Pecos season, reconnaissance trips were made to the Babicora district of Chihuahua, the Hopi country, and the Canyon de Chelly.—*Warren K. Moorehead, Director.*

Smithsonian Institution, Washington, D. C.

During August and September, Dr. Walter Hough, head cura to of anthropology, U. S. National Museum carried on ethnological and archaeological reconnaissance work in Arizona, visiting the Hopi and White Mountain Apache. The archaeological results of the reconnaissance were the location of several hitherto unidentified ruins, notably a large ancient settlement of apparently pre-pueblo age about five miles from Whiteriver, Arizona. A careful examination was made of the numerous picture writings on the rocks in the vicinity of Holbrook. Most interesting of these depictions was a group of snake dancers clothed in archaic costume.

Mr. R. O. Marsh continued during a part of 1924 his work of exploration in hitherto almost unknown regions of the Isthmus of Darien, visiting the Choco, Cuna, and San Blas Indians. A considerable party of scientific men accompanied the expedition, among them Mr. John L. Baer, who was deputed to care for the anthropological work on the part of the Smithsonian.

Throughout the summer months of 1924, Mr. Neil M. Judd, curator of American archaeology, U. S. National Museum continued his investigation of Pueblo Bonito, a prehistoric Indian village in northwestern New Mexico, under the auspices of the National Geographic Society. In these researches there were employed ten white men, six of whom were technical assistants to Mr. Judd, and thirty-seven Indian laborers. The explorations of 1924 mark the fourth season of the five-year Pueblo Bonito project, inaugurated in 1921 after a thorough reconnaissance of the entire Chaco Canyon region. During the years 1921-1923 the Expedition completed the excavation of the eastern and northern portions of Pueblo Bonito. It is in the former section of the ruin that those dwellings last constructed are to be found; in the northern section are slightly earlier houses erected above the razed walls of part of that original settlement which preceded and formed a nucleus for the great communal structure now known as Pueblo Bonito. In 1924 the Expedition

confined its principal activities to the western half of the ruin where rooms of both early and late construction exist. From these much new data were obtained.

Archaeological work in Florida was begun at St. Petersburg, Tampa Bay, in the winter of 1923-1924. It was discovered that the prehistoric inhabitants of the Everglade region and the Florida Keys showed scant evidences of a relationship to the Muskhogian culture, but from Tampa Bay north into the other Gulf States, archaeological data supported linguistic evidences of Muskogian influences. Weeden Mound, near St. Petersburg, was excavated by the Chief, assisted by Mr. M. W. Stirling.

Work in Alabama and Tennessee: when the Wilson dam over Tennessee River at Muscle Shoals, northern Alabama, is finished, the back water of the river will flood a considerable section of its banks, covering several prehistoric mounds and permanently concealing them. In order to rescue a typical collection from these mounds before their submergence, the Bureau allotted to Mr. Gerard Fowke a small sum of money for the excavation of a kitchen midden and sand mound at the mouth of Town Creek, a few miles from Courtland. In the sand mound Mr. Fowke found human burials and accompanying mortuary objects. The most important discovery at this mound consisted of three rare copper reel gorgets, only a few of which have thus far been found.

During the year, Mr. Earl H. Morris, at the request of the Chief of the Bureau, did some necessary repair work on the famous Tower of the Mummy Cave House in the Canyon del Muerto, Arizona.

The bringing of a party of eight Tule Indians from Panama to Washington in the middle of October by R. O. Marsh, mining engineer and explorer, has afforded J. P. Harrington, ethnologist of the Bureau of American Ethnology, the opportunity to make an extensive study of the ethnology and language of this little known tribe, said to number some 50,000 souls; Miss Frances Densmore was also enabled to study the primitive music of this tribe. Mr. John P. Harrington, ethnologist, also conducted excavations in the principal village of the Santa Barbara Indians, known to them as Syujtun, to the early Spaniards as El Puerto de Santa Barbara, and in more modern times as the Burton Mound. The great mound which marks the site is situated on the Santa Barbara waterfront, a block west of the principal wharf, on property now belonging to Mr. Ole Hanson and to Mr. Charles Frederick Eaton. The old village site has always been

the most prominent feature of the Santa Barbara beach, and is most famous in Santa Barbara Indian and Spanish history, but had never been excavated to any extent previous to the present work. Mr. Harrington returned to Washington, D. C. in February. On April 15 opportunity was afforded for further study of the Kiowa tribe by the coming to Washington of Eimha'a (Delos K. Lonewolf), adopted son of the former head chief of the tribe, and Seitmänten (George Hunt), one of the chief men of the tribe. Work with them was continued until May 21, yielding a great mass of ethnological and mythological material.

Dr. Michelson left Washington towards the close of May and proceeded to Tama, Iowa, to renew his researches among the Fox (Meskwakie) Indians. He devoted especial attention to the various gens festivals, for example, the White Wolf Dance of the War Gens. Some texts on a number of sacred packs were translated. A good deal of general ethnology was obtained in both syllabary texts and translations. Some of this included the regulations of various gentes and societies. Additional information on the White Buffalo Dance and mortuary customs and beliefs were secured. *Condensed from "Explorations and Field-work of the Smithsonian Institution for 1924."*

University of Utah

The Department of Archaeology excavated the cemetery of a pueblo site known locally as "Whiskey Ruin," twelve miles west of Blanding, San Juan Co., Utah, on a branch of Cottonwood Wash. The burials were in sloping ground about twenty yards southeast of the pueblo. There were discovered about thirty skeletons at depths ranging from two to seven feet below the surface. All interments but one were in the flexed position. One skull without body was found. The bones were in such bad condition that none could be preserved. From the graves were recovered about seventy-five pieces of pottery, of which six were corrugated, the rest black-on-white; a few bone awls, arrow-points, scrapers, etc. *A. A. Kerr, Director.*

Victoria Memorial Museum, Ottawa, Canada

Archaeological exploration was carried on in British Columbia by Harlan I. Smith, in continuation of his investigation of the material culture of the Bella Coola both past and present. Two additional petroglyphs were discovered at the site of the most extensive group of these remains known in Canada, that is, on the western side of the cañon a mile south of Bella Coola river some three miles above the

mouth. Plaster of Paris moulds were made of two of the petroglyphs at the place and tracings were made of all those that had not been cast. A pictograph on the west side of Dean channel, near Kimsquit, was discovered and photographed. Sites of large rectangular semi-subterranean houses of a prehistoric village were located opposite the mouth of Dean river.

The petroglyphs on the north side of the mouth of Swallow creek on the eastern side of Dean channel, about seventeen miles from its head were mapped and photographed. Plaster of Paris moulds were made of two of the best of them and tracings were made of all the others.

The prehistoric Bella Bella fortification, village site and petroglyphs on the east side of the mouth of Elcho harbour, Dean channel, were also mapped and photographed. The petroglyphs are on boulders on the beach at this place. A plaster of Paris mould was made of the larger petroglyph and a tracing of the smaller. Sir Alexander Mackenzie, the first white man to cross the continent north of Mexico culminated his wonderful trip somewhere in sight of this place. Both the Swallow creek site and the Elcho harbour site are worthy of protection as national monuments. A large pictograph on the north side of Dean channel, two to four miles, west of the Elcho harbour site was also photographed.

Both photographs and motion pictures were taken of archaeological sites including the three Bella Coola villages shown on Mackenzie's map. Mr. Smith learned of the location of a cave said to contain pictographs and ancient ceremonial paraphernalia, in the valley of the Sowiltz, but had no opportunity to explore it during the season.

Mr. Smith lectured twice on the Archaeology and Indians of Canada before the British Association for the Advancement of Science during their visit to British Columbia.

An exhibit illustrating the prehistoric pottery of Canada and another showing aboriginal uses of copper in Canada were prepared by J. D. Leechman and exhibited at Toronto during the meeting of the British Association for the Advancement of Science. He also prepared an exhibit showing the aboriginal uses of minerals, for the meeting of the Canadian Institute of Mining and Metallurgy at Ottawa.

Mr. Smith continued his studies and the writing of his report on the Archaeology of the Bella Coola Indian area and the adjacent

Bella Bella area to the west. He prepared papers on the following subjects:

"A Prehistoric Petroglyph on Noelick river, British Columbia."

"A Prehistoric Earthwork in the Haida Indian Area."

His paper on "The Petroglyph at Aldridge Point, near Victoria, British Columbia," was published in the *American Anthropologist*, Vol. 26, No. 4, October-December, 1924 (Also separate); one on "Trephined Aboriginal Skulls from British Columbia and Washington," in the *American Journal of Physical Anthropology*, Vol. VII, No. 4, October-December, 1924. (Also separate). Another, "The End of Alexander Mackenzie's Trip to the Pacific" which refers to archaeological sites and petroglyphs in the Bella Coola valley and on Dean channel, was published in the Annual Report of the Canadian Historical Association for 1924. One on "Unique Prehistoric Carvings from near Vancouver, B. C." has been accepted for publication in the *American Anthropologist*.¹

Mr. W. J. Wintemberg continued his study of the culture of the prehistoric Iroquoian village site near Roebuck, Grenville county, Ontario, and the preparation of the monograph on this subject. He wrote an article on "Examples of Graphic Art on Archaeological Artifacts from Ontario," which was published in the *Transactions of the Royal Society of Canada*, Vol. XVIII, 1924, Third Series. He also prepared a paper on "A Tentative Characterization of Iroquoian Cultures in Ontario and Quebec, as determined from Archaeological Remains," which was read at the meeting of the British Association for the Advancement of Science, in Toronto, and which was published in abstract in the Report of the Association.—*Harlan I. Smith, Dominion Archaeologist.*

A. V. KIDDER

¹ Published, *American Anthropologist*, n. s. vol. 27, no. 2, 1925, pp. 315-319. Ed.

ANTHROPOLOGICAL NOTES

THE SOCIAL SCIENCE RESEARCH COUNCIL at its annual meeting in Chicago on April 4th announced the appointment of the following fifteen scholars as research fellows of the Council for the year 1925-26, selected from a total of 108 applicants:

Luther Lee Bernard, Ph.D.

Professor of Sociology, University of Minnesota

Problem: A study of the development of the social sciences in Argentina with special reference to the economic, political, and other cultural circumstances under which they were developed.

Place of Study: Argentina.

Charles Warren Everett, M.A.

Instructor in Department of English and Comparative Literature, Columbia University

Problem: Life of Jeremy Bentham and the editing of his unpublished manuscripts.

Place of study: London.

Harold F. Gosnell, Ph.D.

Instructor in Political Science, University of Chicago

Problem: Factors determining the extent of Popular Participation in Elections in Typical European States.

Place of Study: Washington, D. C., England, France, Germany, Belgium.

Marcus Lee Hansen, Ph.D.

Assistant Professor of History, Smith College

Problem: A basic study of the origins of the foreign elements in the settlement of the Upper Mississippi Valley.

Place of study: Washington, Dublin, London, Geneva, Berlin, Hamburg, Bremen.

Joseph Pratt Harris, Ph.D.

Instructor in Political Science, University of Wisconsin

Problem: Workings of election registration systems in the United States.

Place of study: Headquarters at Chicago, field work throughout the country.

William Jaffee, Docteur en Droit

Tutor in French and Economics, College of the City of New York

Problem: The Industrial Revolution in France

Place of study: France.

Edgar W. Knight, Ph.D.

Professor of Education, University of North Carolina

Problem: A study of the Folk High Schools in Scandinavian Countries, especially Denmark, Sweden and Finland.

Place of study: Europe.

Simon S. Kuznets, M.A. (Candidate for Ph.D., June, 1925, Columbia).

Fellow in Economics, Columbia University

Problem: Secular Trends in Economic Theory, their inter-relations and their bearing upon cyclical fluctuations.

Place of study: New York City.

Rose S. Malmud, M.A.

Graduate student, Columbia University

Problem: The Psychology of Literary Ability

Place of study: Columbia University, New York.

Thomas P. Martin, Ph.D.

Associate Professor of American History, University of Texas

Problem: A study of Anglo-American Relations as influenced by economic, political and social forces playing within and between the two peoples.

Place of study: England.

Hutzel Metzger, M.S. (Candidate for Ph.D., June, 1925, University of Minnesota)

Part time Research Assistant, University of Minnesota

Problem: An Analysis of the Price of certain Farm Products, with a view to deriving information that will promote the better adjustment of agricultural production.

Place of study: Minnesota.

Ernest E. Mowrer, Ph.D.

Assistant Professor of Sociology, Ohio Wesleyan University

Problem: Family Disorganization as a Socially Inherited Behavior Pattern.

Place of study: Chicago.

Mrs. Mildred Dennett Mudgett, Ph.D.

Assistant Professor of Sociology, University of Minnesota

Problem: Legislation Affecting the Pre-school Child in certain European Countries.

Place of study: England, France, Italy, and Scandinavian Countries.

Sterling Denhard Spero, Ph.D.

Fellow, New School for Social Research

Problem: The Position of the Negro in Industry.

Place of study: Headquarters at New York. Field investigations.

Dorothy Swaine Thomas, Ph.D.

Research Assistant, Federal Reserve Bank of New York

Problem: The Economic Factor in Crime

Place of study: New York State.

The fellows will travel and study in the following countries: Argentina, England, Belgium, Germany, France, Italy, and Scandinavian countries of Denmark, Sweden, and Finland.

These are the first awards of the Social Science Research Council. Plans have been made to offer research fellowships annually for the following four years.

The following are the officers of the Council: President, Dr. Charles E. Merriam, University of Chicago; Vice-President, Dr. John R. Commons, University of Wisconsin; Secretary, Dr. Horace Secrist, Northwestern University; Treasurer, Dean E. E. Day, University of Michigan. The Council consists of twenty-one delegates elected three from each of the following national scientific societies: The American Economic Association, The American Political Science Association, The American Statistical Association, The American Sociological Society, The American Anthropological Association, The American Historical Association, and The American Psychological Association.

The Committee on Research Fellowships of the Council consists, of Dr. Wesley C. Mitchell, Chairman, Professor of Economics, Columbia University, Dr. Charles E. Merriam, Professor of Political Science, University of Chicago; and Dr. F. Stuart Chapin, Secretary, Professor of Sociology, University of Minnesota.

ANTHROPOLOGICAL SOCIETY OF WASHINGTON. At the annual, meeting of the Anthropological Society of Washington, D.C., the following officers were elected for the ensuing year:

President: Mr. Neil M. Judd, succeeding Dr. Michelson

Vice-Pres.: Mr. J. P. Harrington, re-elected

Secretary: Dr. John M. Cooper, re-elected

Treasurer: Mr. J. N. B. Hewitt, re-elected

Additional members of Board of Managers:

Dr. Chas. L. G. Anderson, re-elected

Mr. Felix Neumann, re-elected

Mr. Herbert Krieger, succeeding Mr. Judd

DURING the spring the University of Washington sent Erna Gunther to the Klallam, Ronald Olsen to the Quinaielt, and Leslie Spier to the Wishram for general ethnography.

PROFESSOR WOLFGANG KOEHLER, director of the psychological laboratories at the University of Berlin, who conducted the experimentation on the mentality of apes in the Canary Islands under the auspices of the Prussian Academy of Sciences is visiting and lecturing in this country.

DR. GEORGE GRANT MACCURDY of Yale University and the American School of Prehistoric Research has been elected to membership in the American Philosophical Society; he has also been appointed a member of the National Research Council, Division of Anthro-

pology and Psychology. In March he was elected a Correspondent of the Anthropological Society of Rome.

DR. RAFAËL KARSTEN, of Helsingfors, Finland, has completed an extensive study of the Jibaro Indians of Ecuador.

WE REGRET to note the death of William Curtis Farrabee, Curator of the American Section, University of Pennsylvania Museum, on June 24, 1925.

MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION, NOTES. Dr. Melvin R. Gilmore returned to the Museum on January 3, after spending the summer and fall in ethnological work among the Arikara of North Dakota, the Omaha, the Winnebago, the Santee Dakota in Nebraska, and the Pawnee of Oklahoma.

Prof. Marshall H. Saville spent the months of December, January, and part of February in Peru and Mexico where he went as one of the official delegates of the United States Government to the Third Pan-American Scientific Congress. Prof. Saville was made an Honorary Doctor in the Faculty of Sciences of the University of San Marcos of Lima, the first university founded in the New World, and was elected an honorary member of the Instituto Histórico del Peru and the Sociedad Geografía de Lima.

Mr. Alanson Skinner has returned from a brief sojourn among the Seneca Indians of the Alleghany reservation in southwestern New York, where he attended the "New Year" celebration and obtained a number of unusual old specimens for the Museum's collection.

Doctor Manuel Gamio, who, while a student at Columbia University accompanied Professor Saville as an assistant on the Marie Antoinette Heye Expedition to Ecuador in 1910, has been appointed Sub-secretary of Public Education in the cabinet of President Calles of Mexico. Dr. Gamio has been Director of Anthropology and Inspector of Ancient Monuments in Mexico for some time. The Department of Anthropology has been given control of the National Museum, a consolidation that will be the means, of advancing research in American archaeology to a considerable degree. Plans are in progress for conducting extensive field work in ethnology and archaeology in Oaxaca, similar to that prosecuted under Dr. Gamio's direction in the Valley of Mexico at Teotihuacan. *Indian Notes.*

PROFESSOR A. C. HADDON has resigned from his post of Reader in Anthropology and Ethnology in Christ's College, University of

Cambridge. A dinner was held on the eve of his resignation, May 23, 1925, in honor of his seventy-first birthday.

A NEW PUBLICATION. The newly organized "Linguistic Society of America" issued the first number of its official organ, "Language," in March, 1925. The journal is to appear quarterly and will contain articles of research and comment in the linguistic field. The first issue contains an article by Leonard Bloomfield, "Why a Linguistic Society," and the official records of the organization of the society.

Under the able editorship of George Melville Bolling, Ohio State University, Aurelio M. Espinosa, Stanford University, and Edward Sapir, Victoria Museum, the new journal promises to be one of unusual merit and significance.

The price per annum is \$4.00. Subscriptions may be sent to Roland G. Kent, Treasurer, Linguistic Society of America, University of Pennsylvania, Philadelphia, Pa.

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